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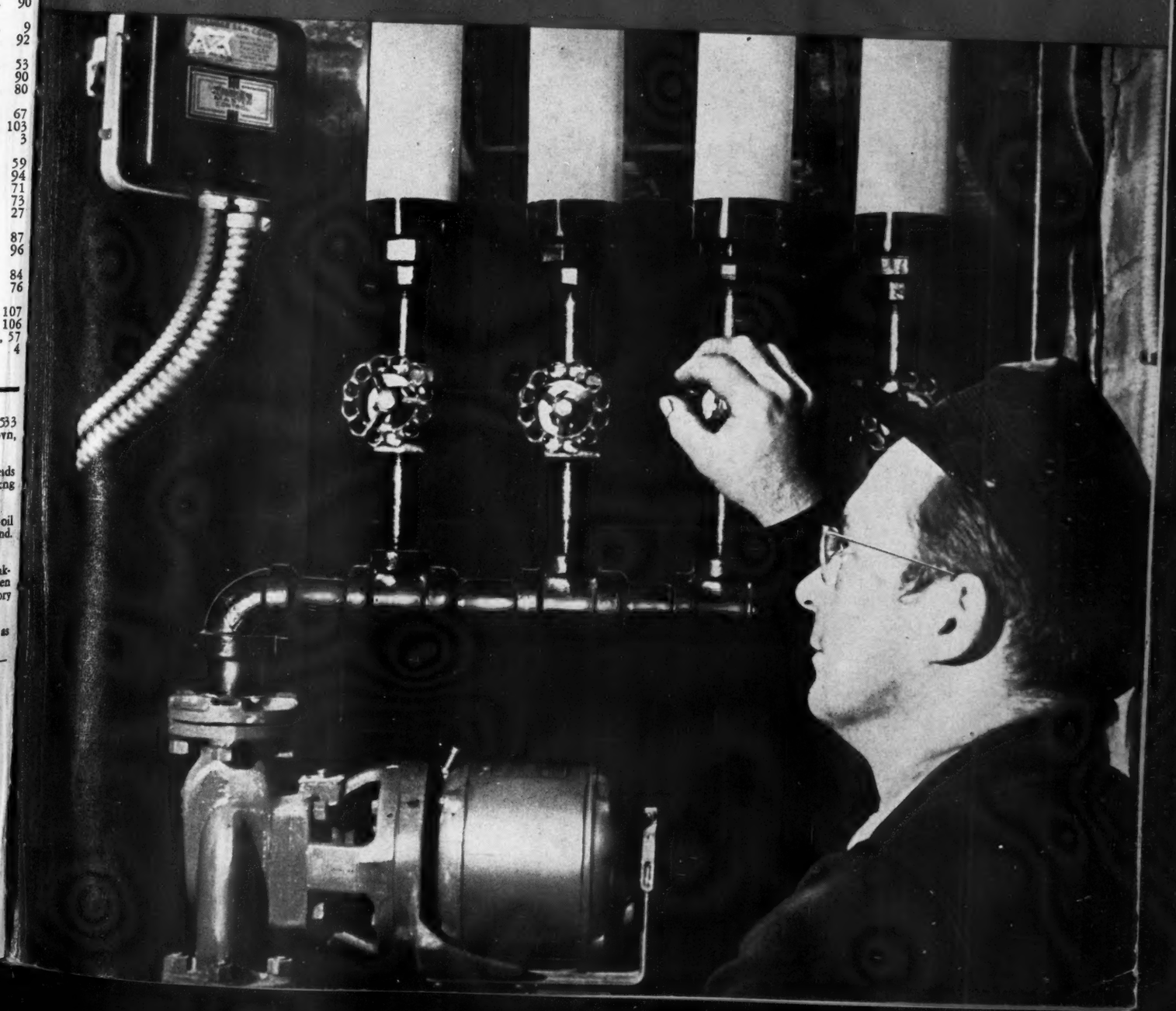
fueloil & oil heat



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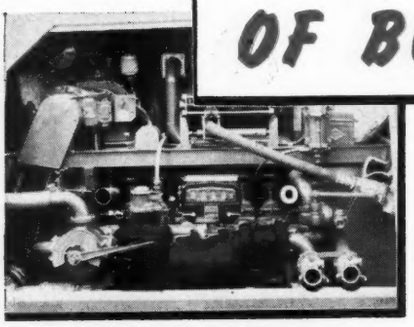
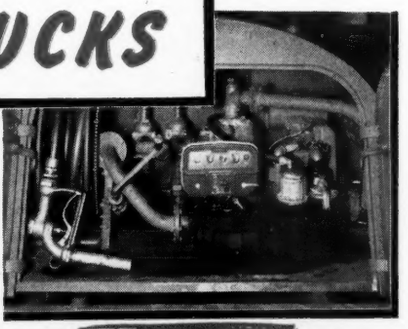
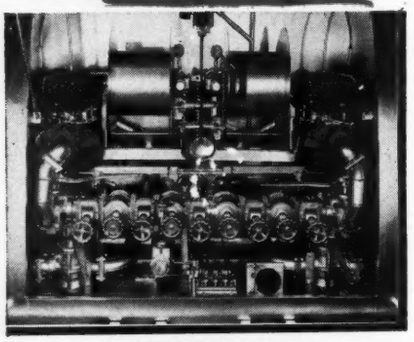


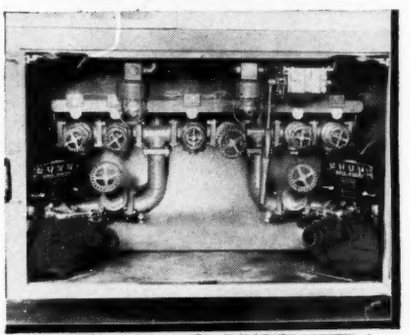
BRODIE MODEL X-140 BRODIMATIC PRINTING QUANTROL INSTALLED IN CONJUNCTION WITH COMBINATION STRAINER AND AIR ELIMINATOR.



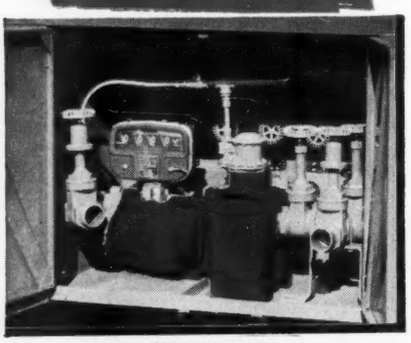
BRODIE MODEL X-50 METER WITH BRODIMATIC COUNTER AND COMBINATION STRAINER—AIR ELIMINATOR.



TWO BRODIE MODEL X-140 BRODIMATIC QUANTROLS PIPED TO MANIFOLD.



TWO BRODIE MODEL X-140 BRODIMATIC QUANTROLS.



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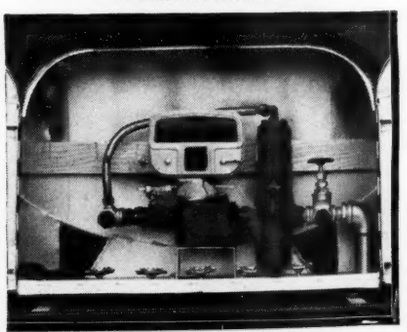

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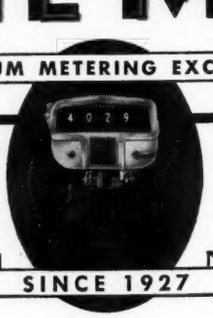

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VOL. 5 NO. 4
AUGUST
1946

Names in the News

J. F. Winchester, associated with the Standard Oil Company of New Jersey for 33 years, is retiring from the company under the company's established annuity plan. A recognized authority on automotive engineering, author of many articles on transportation, and a pioneer in establishing highway transportation organization, Mr. Winchester was manager of the General Automotive Division for Standard. Joining the company in 1913, his charge was eight trucks and four passenger cars, a fleet which grew to 12,000 trucks and 4,000 passenger cars.

Charles Collins and *T. A. Button* have been named vice-president of Gerotor May Corporation, effective July 1. Mr. Collins, now vice-president in charge of sales and advertising has been associated with the company's sales department since 1928, and has served as general sales manager and advertising director since 1940. Mr. Button is now vice-president in charge of production, and has been plant manager since 1944.

Frank W. Kirk, Madison, Wis., has been appointed by Harvey-Whipple, Inc., Springfield, Mass., to travel Wisconsin, Eastern Minnesota and Northern Illinois. Mr. Kirk is well known in the heating trade in that area, having traveled for the past four years representing a

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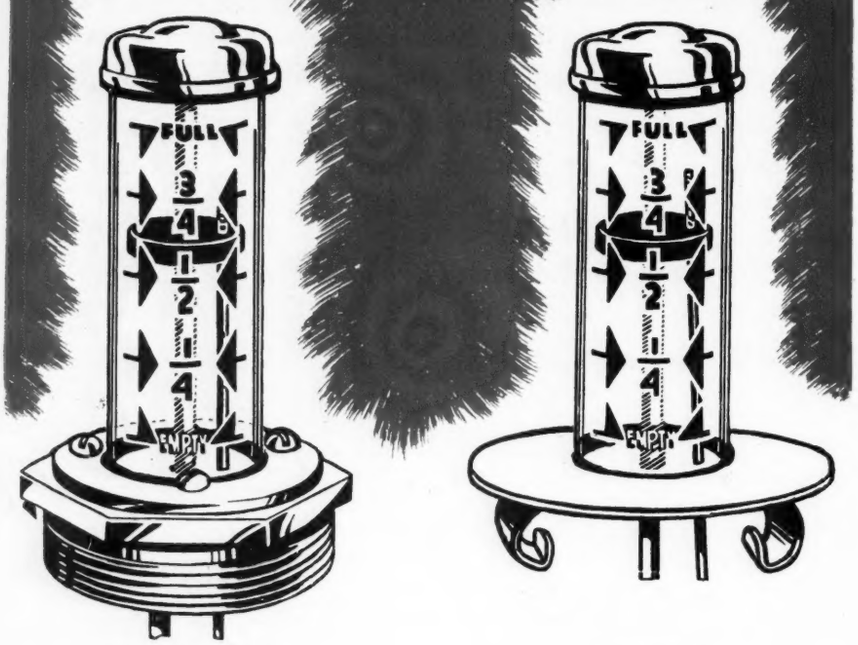

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Mel-Gauge COMPANY

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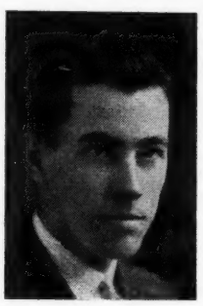
stoker manufacturer. He now will handle the full line of Master-Kraft oilheating equipment.

Everett B. Evleth has been named president of Ray Control Co., Pasadena, Calif.

Mr. Evleth, long prominent in the control business, formerly was vice-president and general manager of Brown Instrument Co., Philadelphia, and previously was vice-president in charge of the Middle West sales zone for Minneapolis-Honeywell, with which he was associated for 13 years. Ray Control Company is a wholly owned subsidiary of Lane-Wells Company, a leader in technical oil field services and equipment.

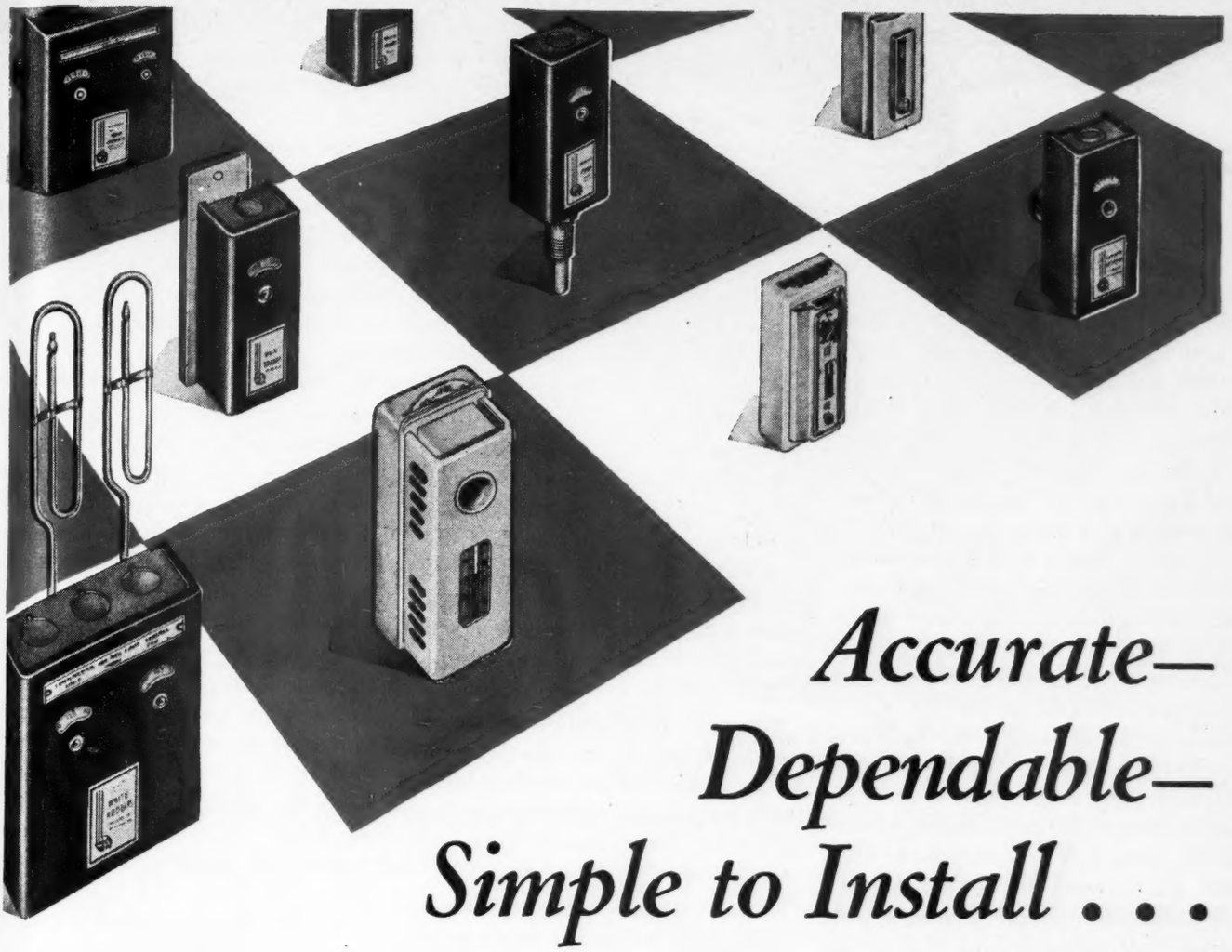
Willis G. Pennington has been appointed director of sales for Automatic Devices Co., Chicago, manufacturer of Weather - Man outside temperature control. Mr. Pennington has been in the heating field since 1936 with the stoker division of Iroquois Coal Company, Peerless Mfg. Company and the Detroit Stoker Company, where he was sales manager.



Henry L. Porter, manager of wholesale sales promotion for Standard Oil Company (Indiana) has been elected president of the Chicago Sales Executives club.

J. B. Trotman, Grand Rapids, Mich., former general sales manager for Blackmer Pump Company, has been appointed head of the new Bowser Industrial Pump Division at Ft. Wayne, Ind. Mr. Trotman has been in the industrial pump business for 30 years.

Monte Weaver has been appointed direct factory representative for H. A. Thrush & Company in the Metropolitan Chicago area. A native of Chicago, Mr. Weaver has had long experience in the heating business, and has just returned from three years' service with the Army in the Pacific area.



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White-Rodgers temperature and pressure controls are so easy to install, so accurate in operation and dependable under even exceptional conditions, it will pay you to use them on every heating application.

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Editorial Leaks

At press time, OPA has just been given a fresh lease on life. The majority of oil-heating men had hoped that it would stay dead, although something more than a fourth of them thought a revival necessary. See the "Trends" section of this issue. Those who had prayed for an immediate burial of the agency got a part of their answer as they wanted it, in the decontrol of all petroleum prices. And while the control can be re-established if prices get too high, the probability is remote.

Decontrol of oil prices earlier than most other commodities was a foregone conclusion months ago. Bowles in February had stated that petroleum could soon be freed, but was being held in check to see us through the peak heating season. In the spring it seemed advisable to hold onto it a few weeks for possible bargaining purposes in the revival of the act. It served that function well.

Events of the week since OPA's revival bear out what OPA was told at the Chicago meeting with the industry leaders in May. Crude prices are up the predicted 25¢ which added to the 10¢ ceiling price rise of this spring gives producers the 35¢ rise that the industry and PAW had wanted since the winter of 1943, and over which Mr. Ickes launched the horror story that the country was about to run out of oil.

The price increases thus far are spotty. Distillates, at this writing, are up .7¢ in New York and New England, up .5¢ in Pennsylvania and Delaware, and in the Midwest are up .5¢ more or less, depending upon freight rate adjustments in the Group 3 structure, which were not reflected in wartime price changes. There is some feeling that the 30¢ a barrel rise in residual in New York and New England (by some companies only) is too high. A few weeks or months will permit all of these products to seek their proper levels, so immediate price changes are not to be taken too seriously.

Generally speaking, oil prices in Midwest cities should not be raised, while in the East and Pacific Northwest they were due for a boost, with the possible exception of the city of Philadelphia, where gas rates are lowest of all Atlantic Seaboard cities.

In the months ahead it would be desirable to adopt more objective pricing policies than we have had in past years. Fuel-oil prices must now be geared to gas prices, no longer to coal, with the result that we may eventually see much lower prices in St. Louis and Minneapolis, for example, with correspondingly higher prices in Baltimore and Boston.

Oilburner prices, with their announced 5.5% increase, result from the June 4 meeting of the Industry Advisory Council and were ready to go into effect before the OPA holiday. They do not reflect the new thinking that 1940 costs may be adjusted upward to cover all cost increases since then. So there will probably be a further small rise in burner prices.

But again, these adjustments are temporary. Within a few months burners will be coming off the assembly lines so fast that the market will find its own competitive level, regardless of OPA.

◈

Few of us in business ever have the time or patience to chase down the reasons for the standards of measure we use. Most of the industry have forgotten—if they ever knew—why a basement tank is 275 gallons instead of 250 or 300. They have lost sight of the fact that in the days of wooden drums the Fire Underwriters allowed only five 55-gallon drums stored in the building, and those couldn't be placed within ten feet of a flame. When steel drums and steel tanks replaced wood, the law was on the books, and stayed. Though there is little reason for limiting oil storage in the basement to 275-gal. units, when encased in steel, we accept this limitation largely from habit, and seldom question the reason for it.

We long have wondered why a "barrel" of oil was 42 gallons, though oil always is shipped in 55-gal. drums. Why not a 55-gal. "barrel"? The answer comes from Ed Swanson of the Department of the Interior, who has been associated for many years with petroleum matters.

When oil first was produced in volume in Pennsylvania in 1859, it was shipped in wooden barrels—any wooden barrel that was available. The price was based on the barrel, but the capacity of the barrel was a matter of chance. Producers used wine barrels, whiskey barrels, herring barrels, pork barrels, cider barrels or any other round container that came to hand. If the buyer were lucky he got a big barrel, but the next shipment might be in smaller containers. A "barrel" of oil might be any volume from a cask to a hogshead, and this arrangement soon brought dissatisfaction both from the producers and the public.

Samuel VanSycle, according to Mr. Swanson, was the first to do something about the situation. He called a series of conferences of oil producers in an around his home town, Titusville, Pa., and for nearly a year the subject was cussed and discussed. In 1866 Mr. VanSycle's conference of producers agreed that a "barrel" of oil should mean 40 gallons and that the herring barrel should be used as a shipping container. Unfortunately, the herring barrel was standard at 42 gallons instead of 40, but in those days of the "bakers' dozen" a little premium to the buyer was usual, and by consent and usage, a barrel of oil became 42 gallons, the standard of petroleum measure we use today.

But Mr. Swanson goes even further in his explanation. Back in the middle 1400s the fishermen, shippers and buyers of herring were having the same trouble that plagued the oil men 400 years later. Herring being a staple food item, and probably an item in barter, it made a big difference to everybody how many herring were in a barrel. An appeal was made to King Edward the Fourth, and after due consideration, the King announced in 1461 that thereafter a barrel should contain 42 gallons of herring—the same barrel that was adopted for oil shipment 405 years later by the infant oil industry.

And since that time, children, many a poor fish has been mixed up in the oil business.

◈

Wonder what ever became of the fellow from Zero Metal Products Company you always found in a manufacturer's office or a supply house, trying to get permission to ship a sample? He must still be in Japan or Europe.

There are those who will bet that he will be back shortly after the first of the year, looking for an order.

POOH FOR YOU! BOGEY MAN

2000 fuel oil companies have protected themselves against gas competition in over half a million homes.

Scully
VENTALARM
Type LC

Type LC is for tanks already installed. No threading of vent pipe necessary.

For new installations use Type LA.

These companies deliver oil whether the customer is at home or not — without disturbing her if she is at home — with no more bother than if the oil were piped into the home.

These companies have equipped their customers' fuel oil tanks with Scully VENTALARM, the whistling tank fill signal.

The driver inserts the gun in the fill pipe, lets the oil flow. If everything is OK, the VENTALARM whistle sounds through the vent. When whistle stops, driver stops filling, leaves delivery slip under front door, goes on to next customer.

VENTALARM helps you hold your customers — and it reduces your costs. Saves 5 to 7 minutes of driver's time at each stop — eliminates non-delivery stops — simplifies degree day delivery — decreases delivery costs 20% to 25%.

[There is also a Scully VENTALARM designed for gasoline tanks on automobiles, trucks, buses.]

SCULLY **VENTALARM** *The Whistling* **TANK FILL SIGNAL**

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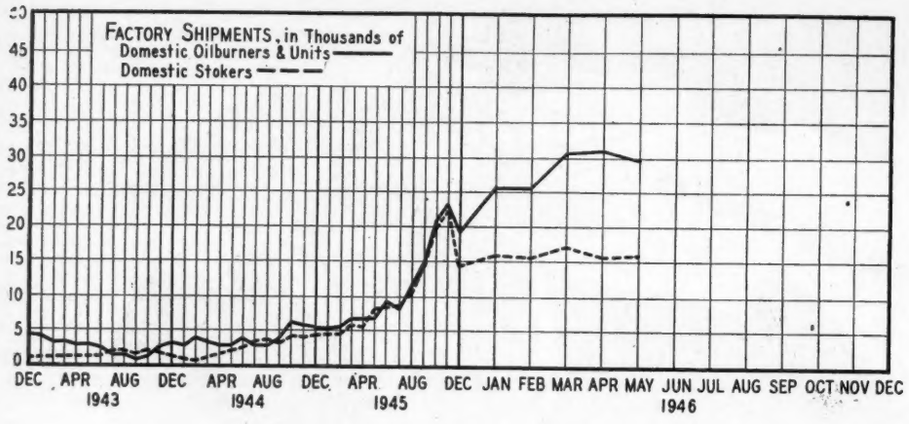
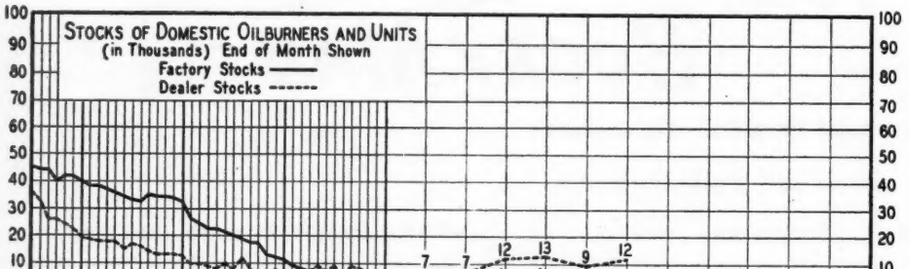

FACTORY SHIPMENTS, in Thousands of
Domestic Oilburners & Units
Domestic Stokers
DEC APR AUG DEC APR AUG DEC APR AUG DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1943
1944
1945
1946

Shipments of Oilburners and Units

Adjusted to include manufacturers other than the 124 reporting to Census Bureau, FUELOIL & OIL HEAT'S estimates of shipments are:

	MAY			FIVE MONTHS		
	1946	*1945*	*Percent Change*	*1946*	*1945*	*Percent Change*
Conversion	25,879	5,672	+356.2	128,959	24,899	+417.9
Boiler units	1,365	390	+ 25.0	5,475	3,524	+ 55.4
Furnace units	2,630	1,059	+ 14.8	8,437	3,684	+129.0
All domestic	29,874	7,121	+319.5	142,871	32,107	+345.0
Commercial	3,498	3,421	+ 2.3	13,386	16,548	— 42.3
Total	33,372	10,542	+216.7	156,257	48,655	+221.2


STOCKS OF DOMESTIC OILBURNERS AND UNITS
(in Thousands) End of Month Shown
Factory Stocks
Dealer Stocks
7 7 12 13 9 12
5 5 4 4 3
JUN DEC JUN DEC JUN DEC JUN DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1942
1943
1944
1945
1946

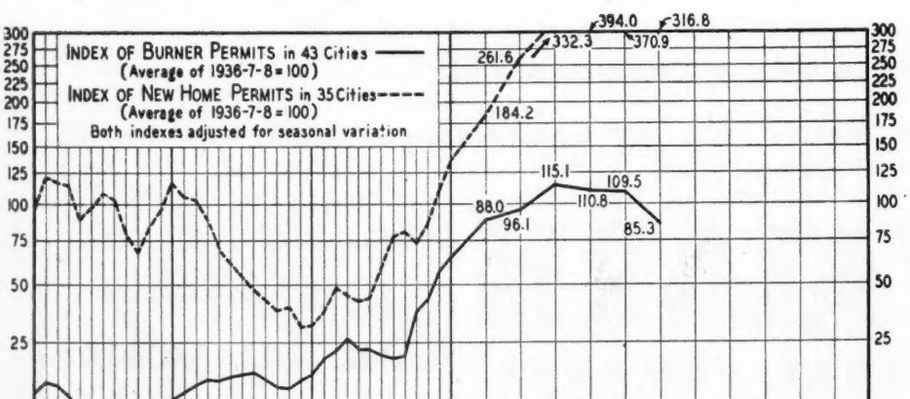
June Minimum Retail Prices: Key Dealers

	CONVERSION BURNERS		BOILER-BURNERS		FURNACE-BURNERS	
	*Top price**	*Low price*	*Top price**	*Low price*	*Top price**	*Low price*
Highest	$465	...	$900	...	$800	...
Lowest	225	...	425	...	475	...
June Aver.	294	...	614	...	535	...
May Aver.	290	...	571	...	538	...

*Top price key dealers for conversion burners are those whose minimum retail prices are $200 or more, for boiler-burner and furnace-burner units (exclusive of ductwork) those whose minimums are $400 or over.

Price Index: Conversion Burners: January 1940 is 100%

WHOLESALE				RETAIL			
June	126.3	Six months ago	123.6	June	132.3	Six months ago	119.9
May	125.7	Year ago	112.2	May	132.3	Year ago	114.1



Oilheating Trends

JUNE INSTALLATIONS of domestic oilburners and units are estimated at 24,881, considerably lower than the preceding month and a little lower than the average for the first six months of the year, which totalled 164,674. Which brings up the point that the industry will have to hustle if it reaches 420,000 installations this year, as forecast in the five-year postwar projection, "Oilheating Tomorrow," published in the October 1944 issue of FUELOIL & OIL HEAT. To reach that goal, dealers would have to install upward of 42,000 jobs in each of the remaining months, with two bottlenecks remaining to be broken . . . electrical equipment for burner manufacturers, and skilled installation manpower.

Burner sales, new orders taken, by dealers in June were approximately 18,292, also considerably below the six months average. Total sales in the six month period were 196,849, or 20% more than installations. June sales of reporting dealers were divided: 87% conversion burners, 10% boiler-burner units and 3% furnace-burner units.

BURNER STOCKS: Dealer stocks of domestic oilburners and units on June 30 were approximately 11,704, up three thousand from the previous month, and showing a longer time lag between receipt of burners and installing them. In some sections this was due to increasing trouble getting tanks. Factory stocks on May 31, the latest available data, were 4,848.

SERVICE INCOME: Service departments of reporting dealers had average June income of $2,086, down 7% from $2,242 reported by the identical dealers in June 1945. In May it was $2,347 and in April $3,634.

BURNER SALES ACTIVITIES: To get some idea as to how near we have approached the period when burners must be actually sold, dealers were asked if their men are actively selling burners today, or if it's still just a matter of order taking from people who know they want a burner. One fifth of the dealers say that their men are actually selling, principally against gas competition, although sometimes the nature of sales contract that the dealer uses makes it necessary to do some real selling to get them signed. For example, one large Eastern dealer will take only an uncancellable contract with 20% cash

deposit, with price subject to adjustment at time of delivery and delivery to be when burner is available . . . this takes selling. One-eighth of the dealers are doing some local advertising in newspapers or radio, and with one exception all of these advertisers are in the group that says it is not necessary to sell. Their advertising is principally to keep the company and burner known in the market.

A lot of the reporting dealers (22%) are refusing to take any orders until they have the burners actually in hand. A few dealers, about one in thirty, report that they ration available burners to their salesmen. No doubt more dealers actually do this, to keep peace in the family. In general, it is obvious that the oilheating industry is not yet ready to start selling.

SUMMER SERVICE: Four-fifths of the reporting dealers made an effort this year to get summer clean-up and tune-up service orders. On the average, 52% of their customers ordered this service. One strong company reports 98%, while one in ten of the dealers reports 90% or over. Just one-fourth of the dealers use their oil truck drivers on this summer clean-up work.

OIL CONTRACTS: This being the first season since before the war that fueloil distributors have gone after contracts, it is interesting to check results thus far. Seven-eighths of the reporting distributors went after contracts. On the average, they have signed up 55.3% of their customers. Including customers of dealers who don't take contracts, it appears that about 48.8% of all fueloil buyers are on contracts. Asked how their number of contracts this season compares with prewar activities, 34% of distributors say they're getting a higher ratio, 47% report about the same ratio and the remaining 19% say they're not doing as well.

SELLING COMPLETE UNITS: Before the war a little more than one-fourth of oilheating installations were boiler-burner or furnace-burner units, and the percentage had been steadily climbing. Since the war complete units are selling at only about half the prewar ratio. Some of the reasons are well known, but the dealers were checked to find the relative strength of the reasons, in their thinking. The first reason almost knocks out all the others, with 87% of dealers saying they can't get them. One-fifth of the reporting dealers say they won't bother with them because they have to sell for over $400 and they don't want the trouble of filing an appeal with FHA. (The percentages add to more than 100, for some checked more than one reason). About one-tenth report that the public prefers to buy conversion burners, while six per cent say that their salesmen sell conversions as the line of least resistance. Miscellaneous reasons written in included these: habit . . . unit prices frighten people . . . in this seller's market, customers will take anything they can get . . . conversions are cheaper in fighting gas . . . believe a good conversion job is as good as a unit . . . as a rule the existing boiler is OK and we don't sell things that are not needed.

OPA EFFECT: In the two weeks following June 30 exactly half of the reporting dealers had some of their costs raised above former ceilings, but only 19% of them raised their own selling prices on burners and other equipment.

Nearly three-fourths (72%) of the dealers wanted OPA permanently killed. All of the companies wanting to revive price control were large dealers, and they constitute just about half of the large dealers heard from. Every one of the smaller dealers wanted OPA killed.

In explaining their OPA views, these comments were typical: . . . We need OPA to hold some level on burner prices, what with stringencies in motors and transformers and now fuel units. . . . Rents and food items should be controlled. . . . Another OPA term merely postpones the day of adjustment with no sign of improved production. . . . Supply and competition will take care of burner prices.

Oilburner* and Building Permits

OILBURNERS					DWELLINGS			
June		6 MONTHS			June		6 MONTHS	
1946	1945	1946	1945		1946	1945	1946	1945
..	..	..	..	Baltimore, Maryland	488	14	2522	43
..	..	..	..	Binghamton, New York	12	10	54	11
45	14	286	80	Bridgeport, Conn.	..	..	..	..
..	..	..	..	Detroit, Michigan	348	701	4957	1255
87	5	255	21	Elizabeth, N. J.	2	0	9	0
40	3	174	27	Freeport, New York	..	..	..	..
..	..	..	..	Greenwich, Conn.	34	0	109	1
..	..	..	..	Hackensack, N. J.	4	42	..	44
54	5	247	19	Irvington, N. J.	1	0	8	0
..	..	..	..	Lynn, Massachusetts	4	1	30	2
85	6	444	28	Milwaukee, Wisc.	149	170	962	..
34	10	264	84	Minneapolis, Minn.	96	61	813	248
42	7	228	60	Mt. Vernon, New York	..	..	..	..
30	31	259	157	New Bedford, Mass.	..	..	..	..
51	1	188	20	New Haven, Conn.	..	..	..	..
0	0	0	0	New Orleans, La.	..	..	..	..
30	1	132	71	New Rochelle, N. Y.	5	0	66	0
63	4	184	..	Norfolk, Virginia	20	7	119	22
0	0	2	2	Oakland, Calif.	..	..	..	..
96	8	407	46	Omaha, Nebraska	91	19	461	125
..	..	..	..	Orange, New Jersey	1	0	4	0
47	1	208	..	Passaic, New Jersey	..	..	..	..
100	15	431	42	Paterson, N. J.	7	0	29	1
543	..	2629	..	Philadelphia, Pa.	..	..	..	..
..	..	..	..	Plainfield, N. J.	12	5	60	5
24	9	184	40	Portland, Maine	5	1	61	6
..	..	..	..	Poughkeepsie, N. Y.	..	..	..	..
107	12	457	48	Providence, R. I.	8	4	35	4
..	..	..	..	Reading, Penna.	9	6	58	7
17	2	202	4	Richmond, Virginia	..	..	..	..
42	0	276	8	Rochester, N. Y.	..	..	..	..
29	4	110	24	Rockville Center, N. Y.	29	0	42	0
7	0	67	14	Salem, Massachusetts	2	0	9	0
67	6	303	52	St. Louis, Missouri	25	0	177	0
79	12	620	61	St. Paul, Minnesota	112	35	699	217
..	..	..	..	Seattle, Washington	191	137	1430	705
..	..	..	..	Springfield, Mass.	49	5	331	16
39	4	139	27	Stamford, Conn.	..	..	..	..
39	..	135	..	Syracuse, New York	9	11	96	55
..	..	..	..	Trenton, New Jersey	3	0	3	3
..	..	..	..	Utica, New York	2	2	..	3
184	15	948	127	Washington, D. C.	..	..	..	..
..	..	..	..	West Orange, N. J.	13	1	67	3
28	11	131	37	White Plains, N. Y.	2	0	18	1
38	4	293	12	Wilmington, Delaware	43	0	132	0
65	8	324	96	Worcester, Mass.	..	..	..	..
1530	198	7371	1207	*Totals*	1776	1222	12399	2777
+672.7		+510.6		*Percent Change*	+45.3		+346.4	

*Permits are not total sales in each market since none are reported from suburban areas, which normally account for 20% to 60% of total sales in each market; nor are they an accurate index where enforcement is lax. Rightly used, however, they are a useful working index.

CHECK THE FACTS and you'll find...

OIL-O-MATIC'S SUCCESSFUL FUTURE

WE'VE SAID IT BEFORE, and we say it again..."OIL-O-MATIC is the *one* franchise that has everything!" That's the basis of Oil-O-Matic's "Success Story"...a story based on *facts* that prove Oil-O-Matic's leadership...that offer a long and successful future for every Oil-O-Matic dealer. Check the facts for yourself and see why Oil-O-Matic is easier to sell than to sell against!

DESIGN *LEADERSHIP*

Oil-O-Matic is not just another oil burner. Instead, it is based on the Low Pressure Atomizing Principle wherein air and oil are mixed *inside* the burner. As a result Oil-O-Matic extracts *more* heat from *less* oil, handles any type and grade of fuel oil without clogging, burns as little as 2 quarts of oil an hour, and assures long, trouble-free life with minimum service.

Oil-O-Matic was *first* to develop, build and market a *fully automatic* Low Pressure type burner; *first* to develop, patent and manufacture automatic intermittent electric ignition control; *first* to develop, patent and produce a burner with all moving parts on one shaft; *first* to design and extensively use special stamped and steel parts in oil burner construction; *first* to design motors for its own use and to manufacture them entirely within its own factory.

ENGINEERING *LEADERSHIP*

"Engineering against engineering!" That is Oil-O-Matic's watchword. It means designing an oil burner that is better than any other oil burner—and not just better than hand-firing. It means the design and perfection of such features as the Thrift Meter, Lo-Pressurotor, Flame Stabilizer, and Oil-Air Nozzle . . . features that make the Low Pressure Principle in the Oil-O-Matic system the most highly developed and highly perfected in the oil heating world.

To carry out this progressive policy even more effectively, Oil-O-Matic has already expanded its Engineering and Research Division . . . has increased its staff five-fold, broadened its scope, and greatly enlarged its facilities.

MANUFACTURING *LEADERSHIP*

With the manufacturing capacity and know-how that made Oil-O-Matic the peacetime leader of the oil heating industry, it is not surprising that Oil-O-Matic reached a war production rate of $20,000,000 a year . . . and was *five times* awarded the Army-Navy "E", plus the U. S. Army Air Forces' "Approved Quality Control Rating" with renewal.

These same facilities are now 100% devoted to the manufacture of a still greater volume of precision-built peacetime products.

WILLIAMS OIL-O-MATIC DIVISION, Eureka Williams Corporation

Oilheating Salesman of 1947

Second of Two Articles on Psychological Aptitude Testing

By
William S. Maulsby*

WHEN THE DAY OF what Matheson calls the "passionate purchaser," and what someone else might call the "sulky seller," comes to an end—the fueloil and oil heating industry is going to be in the market for productive retail salesmen. These salesmen may not have to be so high pressure as the boys were in the early days of 1925 and thereabouts when a home burner installation cost as much as $1,000 and when the salesman's share ran to around $200. But these oilheating salesmen of the future had better be good, if they are to exploit the wide acceptance oil has today for home heating, and if they are going to keep a reasonable number of jumps ahead of the gas peddlers.

To any executive who already is beginning to worry about how he is going to select these star retail salesmen of—shall we say 1947?—there may be some help in the experience of an organization that has tested thousands of applicants for all sorts of selling jobs. For whatever it may be worth, we are glad to pass on the fundamentals of what we have learned about better methods of selecting salesmen.

In selecting a good salesman, it is necessary to find someone who possesses in the right combination perhaps as many as a dozen or more success traits. But to spot a probable failure, often all that is necessary is to find a single significant failure trait. Keep on looking for the success traits; but don't forget to be on the watch, too, for even one failure trait. No matter how good an applicant may look to you otherwise, the presence of one well-developed failure trait ordinarily is justification for rejecting him.

For instance, let us assume that you are considering a man who in every other way is perfect; but he hates selling and he has no sales sense. If he is applying to you for a selling job, you can be sure he will not tell you he dislikes selling. How far will such a man go in your business? Endow him, if you like, with every other good trait in the book; but he is not interested in selling, and he is so lacking in sales sense that he cannot even take advantage of the broken fingernail the lady of the house acquired that morning while she was shoveling coal. And as for answering the complaint that the deliveryman had dripped oil on the lawn and killed the grass, he would be completely tongue-tied, even if well-rehearsed in the proper answers.

Can you imagine a man like this checking 600 or 800 customers a year to renew their oil contracts? Can you see him stirring up his friends or doing a spot of cold canvassing to dig up even a few more prospects? Is he going to sell even one burner installation a year? Remember, he hates selling and he has no sales sense. Of course, he will be no good for you.

Have No Failure Traits

This mental exercise of imagining one failure trait that can outweigh any number of success traits can be carried as far as you like. Suppose a man cannot keep his files straight, or suppose he looks enough like Dracula to frighten the average housewife into hysterics, or suppose his voice over the telephone is sissified or repulsive. Knowing the details of your business, as you do, you will have little difficulty in making a list of other knockout qualities, as well as a list of many qualities you desire in a salesman.

It is possible to spot the presence—or absence—of many significant qualities during the procedure you already are following in screening "sheep" applicants from "goat" applicants. The information the applicant gives on the application form can be most helpful, if you know how to make the best use of it.

Your Experience History

The scientific way to make your application form a real screen begins by making two piles of application forms. One pile consists of forms filled out by persons who later became good salesmen—for you or for some other company in the same field. For the best statistical value there should be about 100 forms in this pile. That is why the suggestion is made that a group of similar companies might find it helpful to get together on this project. Well, you have one pile of forms that you know were filled out by men who turned out to be just what the doctor ordered.

The second pile should contain about the same number of forms filled out by men who looked good enough to employ, but whose subsequent records showed that they are not the kind of men who make good in your kind of selling job.

The next step is to compare the two piles, item by item. Let's take one item for an example. Let's take the line that inquires how far the applicant got in school. Let's count to see how many of the "success" men left school at the end of every grade, beginning with the bottom and going right up to the top. Let's check, too, to see how many of them ever took any night courses or any correspondence courses after they stopped their formal education. And let's note in which subjects they took these courses, just as we will note in which subjects they specialized in school and college.

Now, let's do precisely the same thing for the "failure" group, and then tabulate the results. We may find that success salesmen have no clearly marked educational pattern; that is, that some of them left school as early as Grade 4, that others

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have Ph. D. degrees from a university, and that the others are scattered fairly evenly all the way in between. If we find any such state of affairs, that line on the application form is no good at helping us select salesmen who will succeed. And, if we find that the same state of affairs exists among the failure salesmen, that line on the form is no use either in giving us advance notice of a man who probably is going to fail.

But suppose—as may easily happen—we find that most of the success group have about the same sort of educational history, and that most of the failure group have a different sort. Once we had the facts in mind, we would be able to nod our heads sagaciously when we read the information on that line as filled in by the young man who is going to apply to us for a job tomorrow.

You can see that, if this procedure is continued for every line on a fairly comprehensive application form, quite a bit of significant information is almost sure to be disclosed. One benefit, of course, is that when you know which are the significant lines, the next time you have some application forms printed, you can disregard all the lines on your present form that your study shows contain no significant information.

Even Names Important

In a study of this sort, be sure to check every line. Even the names of the men may be important. Men with one-syllable names may be more successful (or less) than ones with longer names. Names that clearly indicate certain racial backgrounds may help or hurt a man in certain territories. The part of town in which the man lives may be significant. Check all the items. Don't try to puzzle out the reasons why some apparently irrelevant fact seems to differentiate between good men and poor ones for you. Be thankful you have found something that may be helpful. After you think you know the answers, continue to check their validity on new applicants until you are sure that you have a practical instrument.

After you have a revised application form that restricts itself to significant questions, you can have such a form filled out and scored by the girl at the reception window or by any other intelligent clerk. If the score is not high enough, you do not need to waste any more time, energy, or money on that applicant. You occasionally may miss a good man even with all the care you have taken to construct a weighted application form; but you will not be bothered with a much larger number of characters who would be absolute misfits for you.

You undoubtedly are miles ahead by this time and can see that this same technique can be used for the sort of information that is disclosed during your regular interviewing procedure. Once again, you assemble the interview data for known successes and known failures, and you analyze it item by item. If you find significant differences between successes and failures, you concentrate on those points in future interviews, and you disregard points on which there are no significant differences. Maybe the way the man shakes hands indicates something; maybe it does not. Maybe how well his trousers are pressed is important. Maybe the impression you get of his alertness is a good guide. The only way to be sure is to compare the successes with the failures.

One more suggestion before coming to the aptitude testing part of an employment procedure. For a man who looks good, do a little checking of the information you get from the application form and from the interview. Any applicant is likely to put his best foot forward; but, if he puts it too far forward, he actually may have belonged in the discards instead of in the group that you are going to put through the final screening—psychological tests.

You will find that some of the information disclosed by the psychological tests significantly differentiates the probable successes from the probable failures. In addition, some of the rest of it will be significant for another reason.

Sense of Humor?

If it is not significant from the probable success point of view whether or not an individual has a sense of humor, let us say, that information still is highly significant to that man's sales manager. If a man has a sense of humor, you often can kid him into doing the right thing. If he does not have a sense of humor, you had better be strictly serious with him at all times. If he responds best to praise and encouragement, he should not be treated in the same way you would treat a man with a skin as thick as rhinocerous hide.

We at the Klein Institute ordinarily do not see the men we test for our clients. We do not talk to them. We know no biographical data except sex, age, height, and weight. We do know, however, their answers to the test questions. And it is these answers that enable us to tell our clients about the individual's inner qualities.

Oilheating Salesman 1947

If we were painting a portrait of the inner qualities of a successful retail salesman for the fueloil and oil heat industry, we could do it one of two ways. We could tell how he differs from men in general, or we could tell how he differs from other salesmen. Also, we could tell how his pattern of responses to test questions conforms to the job requirements. You might be interested to see if you agree with this description of the inner qualities of your Mr. Oilheating Salesman of 1947.

To begin with he is going to differ from men in general by having a real love and zest for selling, or else a well-developed sales sense—or both. That goes without saying. He is going to be willing to work nights as well as days. He probably will rate high in what persons who happen not to like him will call "brass" or "nerve," but which his friends will call "courage," "drive," or "backbone." Sales managers who do not prefer a shorter expression call it "intestinal fortitude." Mr. Oilheating Salesman of 1947 will tend to be serious-minded, and probably would rate low in tact and diplomacy. Tact and diplomacy may be all right behind a counter, but they do not help much in house-to-house selling.

When you compare a man who will be a good retail salesman of oil contracts and of oilburners with a man who will be a star in other fields of selling, one curious point comes to light. In almost all traits that are important to other types of salesmen, the success range for them is more limited than it is for a good retail salesmen of burners and fueloil.

For example, suppose the amount of self-reliance necessary for a successful salesman of life insurance ranges between 30 points and 60 points on a certain scale. This would mean that a man who scored higher than 60 or lower than 30 would be out of line in this one quality for selling life insurance. But, as far as this quality

(*Continued on page 123*)

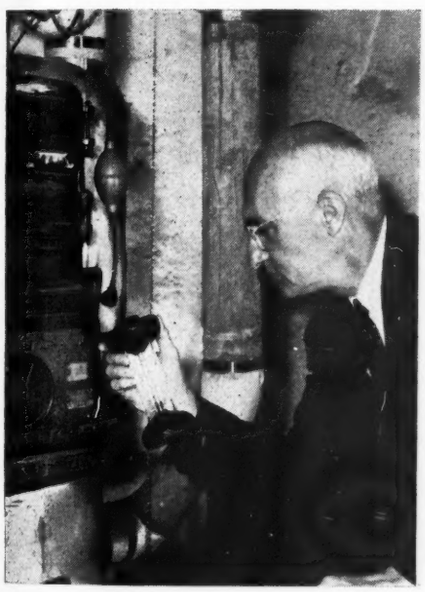
Combustion Testing Complications

Factors Difficult to Evaluate Determine Real Efficiency

By

J. W. Schulz

OVERALL EFFICIENCY OF a domestic oil-fired boiler or furnace can be ascertained in the laboratory with reasonable accuracy. In attempting to report accurately on a test, an engineer may start



with the statement that under the test conditions the oilfired unit showed, for example, 85% overall efficiency. If he is thorough and conscientious, he is likely next to describe the conditions for testing the unit, since unless these are understood the number arrived at as the efficiency of the equipment has no real meaning. Operating the burner for 30 minutes and then keeping it idle for one hour, as an example, will produce lower overall efficiency than operating it steadily, hence it is important that this condition is understood by those seriously interested in the results. Also important are such factors as time given to heating the boiler or furnace before the test was started, number of hours included in the test, whether the oilburner adjustments are similar to those which can be used on actual installations, and in general whether or not the intention was to simulate conditions which occur on typical installations and to arrive at a number significant to men interested in the probable overall efficiency of the same oilfired boiler or furnace on actual installations. Certain laboratory tests of boilers and furnaces give data valuable for estimating the overall efficiencies of actual installations. Other tests do not. Equally important to these considerations are the bases for the calculations, made after completion of the test, to arrive at the conclusion that the equipment tested showed some certain efficiency. Using one basis for these calculations will lead to a higher or lower number than using another basis. With respect to both test conditions and calculations, there are of course standards which may be observed by laboratory technicians. Regardless of whether or not they were observed in reaching the conclusions and the important number which represents the overall efficiency, the bases for the test conditions and calculations must be known to and also significant to the man who seeks to attach significance to the test result.

Much has been accomplished in the oil-heating industry, particularly in the past ten or 15 years, in the direction of reducing oil consumption by applying portable combustion testing instruments to actual installations. Learned technicians and responsible executives have stressed again and again that there is no possible excuse for not applying the draft gauge, CO_2 tester, and stack thermometer to every installation which has just been completed and started, which has been renovated or modernized, or which is being adjusted carefully.

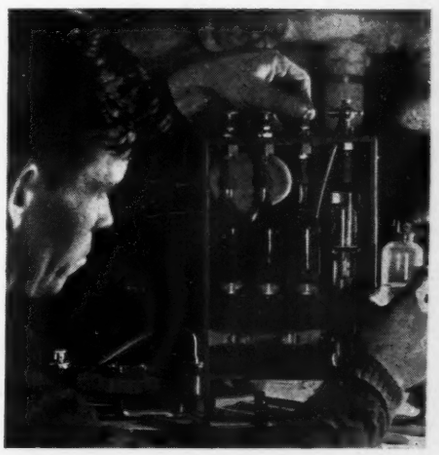
By and large, these fundamentals are recognized as true; they are taught in textbooks, manufacturers' instruction manuals, lectures and oil heating technical courses, and every vehicle to oil heating education:

First, the percentage of carbon dioxide in the flue gases is indicative of the combustion quality, lower than about 8% CO_2 being recognized as intolerably low according to the opinion of many.

Second, the temperature of the smoke-pipe gases leaving the boiler or furnace is important to overall efficiency and fuel economy, a stack temperature above 600° being regarded as unsatisfactorily high in the opinion of many authorities.

Attached to even these simple principles are certain premises which in actual practice often are important. High CO_2 percentage and low stack temperature are not to be gained through sacrificing practicability. An installation must not break down often or otherwise perform in an undesirable manner because it gives high CO_2 and low stack temperature; combustion should not be incomplete with the result that excessive amounts of smoke and soot are formed; it should not be necessary to switch a burner from the usual grade of fuel oil for the burner type and to an especially easy-to-burn oil for the sake of arriving at passably high test readings.

Caution is a good byword in attempting to advance to additional fundamentals which can be recognized as unquestion-



ably true. It is true that where the stack temperature is high, bettering the CO_2 by one per cent gives a greater improvement in efficiency, and a greater expected fuel savings, than where the stack temperature is low. Also it is true that where the CO_2 percentage is uncommonly high, above 10% or 12%, decreasing the stack temperature by a given amount results in a greater improvement in efficiency, and a greater expected fuel savings, than where the CO_2 percentage is in the ordinary range or low.

To attempt to tie in these factors to numbers, or stack loss charts or tables, which apply to actual installations is the big problem the oilheating industry faces today.

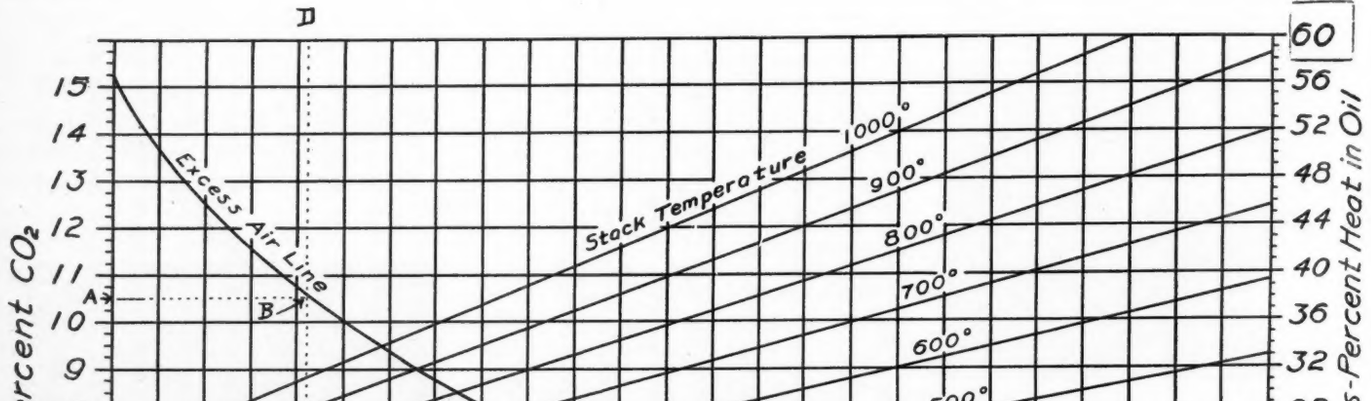
Stack loss charts and tables of a dozen different bases have been circulated in the oilheating industry for use by the men who now, as the result of thoroughly good educational efforts, are using portable combustion test instruments in their everyday work. Often this question comes from a man newly educated to taking readings of draft, stack temperature, and CO_2: "And where is the paper which tells me how to use my readings to determine the efficiency of the installation?" The wording of the question often differs, of course. The man may ask, "How do I find out, as a result of my testing, what percentage of the heat in the oil goes up the chimney?" Again, he may have the thought, "Where do I find out how much oil will be saved yearly, on a job which has been using a certain amount of oil a year, as the result of upping the CO_2 or lowering the stack temperature by some certain amount?"

Especially after they have made zealous and almost fanatical efforts to induce practical men to use combustion testing instruments, educators and equipment manufacturers and others interested in advancing the practical application of combustion test instruments are hard pressed to answer these questions. Often it is difficult to resolve to tell Junior at the proper time that there is, after all, no Santa Claus and no Easter Bunny, but that there are instead certain hard problems to face in life when the mentality has, we hope, developed sufficiently to size up these problems.

Truthfully, only a very sorry approximation of the efficiency of an actual installation can be reached by applying a CO_2 and stack number to a simple chart or table, although when properly used such charts or tables are at least exceedingly interesting. Some of the reasons, overlapping to a certain extent, for the sorry approximations of efficiencies of actual installations reached through use of the well-known type of chart or table include:

1. Almost of necessity, these charts and tables are based on continuous operation of the oilburners, which cannot be taken as a premise with on-off oilburners since frequently overall efficiencies are 10% to 30% lower because of intermittent burner operation than they would be with continuous firing.

2. Complete combustion, that is, no escape of burnable substances from the firebox, is the premise of the typical chart,



A stack loss chart *should be handled with the same respect usually shown to a loaded shot gun, according to the author. Jumping to conclusions about actual efficiencies, overall efficiencies, and probable fuel savings is not in accord with good engineering principles. More often than not, the actual fuel savings are greater than would be estimated through using the chart.*

To use this chart, which fits No. 2 fuel oil:

1. Locate the proper CO_2 percentage at the left-hand side of the chart. This is point A, as an example, representing 10.5% CO_2. From this point, draw a horizontal line towards the right, as far as the "Excess Air Line."

2. At point B, where the line just drawn intersects the Excess Air Line, draw a vertical line, shown here as C to D.

3. Locate the proper stack temperature on line C-D (Point E in this example). This is the intersection of the stack temperature line and line C-D. From this point (E), draw a horizontal line across the chart towards the right, and read the right-hand scale to determine the stack loss which corresponds to the CO_2 and stack temperature readings you started with. Point F, as the example, corresponds to 18% stack loss, in terms of total heat in the oil.

The accompanying article gives the reservations with which this chart should be used, and cautions that expert use, not flippant use, should be made of charts of this type.

also almost unavoidably, whereas on certain installations there are definite losses caused by incomplete combustion.

3. Heat given off in the basement by the furnace or boiler is a factor. If the premise is that the basement must be heated and that it is not being overheated by the escape of heat from the heating equipment, it may be concluded that there is no decrease in efficiency caused by escape of heat from the furnace or boiler and any other heating equipment in the basement. But the premise for the assumptions or calculations must be stated, else there is confusion.

Savings Greater than Indicated

On actual installations the fuel bills may be considerably lower than they would be otherwise if, with high stack temperature, the smokepipe is unusually long and located where heat from it serves to carry heating load, and if the chimney is inside instead of being outside the house. Even the heat, appreciable in certain instances, given off by the hot base, firing or flame observation doors, and flue cleanout doors may or may not serve actually to lower the fuel consumption and effectively increase the efficiency at which the fuel is used.

4. Heating plant characteristics must be considered when good estimates are being made of the actual efficiency at which the fueloil is being used. On certain installations, improvements made to the heating plant save oil but do not cause different CO_2 and stack temperature readings which serve as a cue to oil savings. For examples: Improving the venting of one-pipe steam plants often lowers oil bills greatly; removing oversize radiators from certain rooms and installing larger radiators where needed may cut oil bills greatly; oil is saved by decreasing the heat loss of radiators through outside walls where for any reason this loss is excessive; even installing a larger indirect water heater, tank or tankless type, may save oil on a summer-winter hot water layout where disregarding fuel economy the plant in the past had been adjusted mainly to obtain maximum hot water from inadequate equipment at whatever the expense for oil.

5. Oilburner controls are important. Merely arriving at better on-off cycling of the burners through installing different controls or readjusting existing controls has reduced the oil consumption of certain plants 50% for the summer and 10% to 15% for the heating season. Clock thermostats cut fuel costs 10% to 15% in many homes. Special controls for large buildings often reduce heating costs by 10% to 25%.

The importance of the firebox is realized in a practical way by many dealers who have specialized in replacing old, slow-heating fireboxes by modern rapid-heating fireboxes capable of especially clean combustion. Still, and although the firebox improvements were made to arrive at improved combustion, often the fuel savings actually realized were much higher than could be justified by comparing in any way the before-and-after readings obtained with combustion testing instruments. This is caused by several factors. The amount of burnables which escaped from the old fireboxes during the warm-up period was reduced greatly by the switch to the rapid-heating fireboxes, but was not reported by flue gas analysis for only CO_2. Greatly increased amounts of radiant heat come from the improved fireboxes. In overall, the effect is that heat travels to the rooms more speedily with the new fireboxes, resulting in short oilburner "on" periods with firing rates unchanged. Steam plants, especially, are improved through the switch to fireboxes which heat more rapidly after the burners start; the boilers start giving steam in fewer minutes, and give more steam by a good margin during an "on" period of given length.

Reducing Firing Rate

Reducing the firing rate of an installation previously fired too hard cuts oil bills in several ways. Of itself, combustion is improved because the burner operates more nearly continuously, or has longer "on" periods, or both; this improvement in combustion cannot be evaluated, of course, by a CO_2 tester. In addition, the stack temperature is reduced, but usually by an amount unimportant compared to the fuel savings actually realized as a result of switching from a greatly oversize fire to a fire of the proper size.

The efficiency at which the fueloil is actually used is improved especially by well-advised changes to large steam heating plants. Changes which have cut oil consumption greatly include treating the boiler water properly to achieve better circulation and steaming more free and more rapid, replacing defective steam traps, installing radiator orifices, installing zoned heat control systems, applying highly effective insulation to boilers and steam mains, regulating the draft properly, and converting large boilers from manually-controlled or on-off firing to firing which is continuous and modulated automatically for most of the heating season. The fuel-saving effect of most of these improvements is shown but poorly by simple combustion tests.

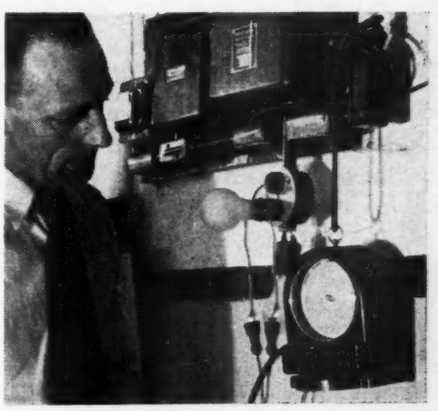
Limitations of the Chart

The accompanying stack loss chart has these limitations:

1. It is based on calculations which cover the combustion of light fueloil, roughly grade No. 2, of hydrocarbon ratio which results theoretically in 15.25% CO_2 when complete combustion is attained with no excess air.

2. It is based on continuous operation of the oilburner.

3. It is based on complete combustion; that is, on all the carbon in the oil being burned to carbon dioxide and all the hydrogen being burned to form water. This condition is not encountered where appreciable smoke and soot are formed or where oil vapor escapes unburned from the combustion chamber.



4. It is based on the gross heating value of the fueloil. Unlike certain other charts and tables, it gives stack loss in terms of percent of total heat in the oil. It does not give the stack loss in terms of "preventable stack loss," or "sensible heat in wet flue gases."

If an oilburner expert desires to assume that combustion is complete, he may determine the stack loss (as percent of total heat in the oil) from this chart on an approximate basis . . . knowing his answer is

based on continuous operation of the burner, and that on-off operation results in a decrease in efficiency.

Reports of tests which revealed the decrease in efficiency caused by on-off operation, with heavy firebrick and light-weight brick, can be used to gain an idea of the allowance which must be made for on-off firing with different lengths of "on" periods and different total "on" time out of 24-hours. To make such allowances is difficult. Many differences in are invited by making them.

Where it is desired to assume that the before-and-after overall efficiencies of a heating plant are known, in spite of the complications in this, the oil savings which will result from improvements in overall efficiency can be computed simply by multiplying the previous yearly oil consumption by the "before" overall efficiency and then dividing by the "after" efficiency and obtaining a figure for the estimated future yearly oil consumption. For example, if on an installation which used 3,000 gallons of oil a year the overall efficiency is increased from 50% to 75%, the estimated yearly oil savings is figured thus: Multiply 3,000 by 50, then divide by 75. The indicated savings is obtained by taking 2,000 gallons (the anticipated oil consumption which results from the improvements) from 3,000, the original figure for yearly oil consumption.

The problem of using portable combustion testing instruments to secure good estimates of the actual efficiencies of typical installations of on-off oil burners plainly is not susceptible to easy solution, dispite the advantages which could be gained if it were. However, the use of combustion testing instruments does save vast amounts of fueloil, and the instrument readings can serve a patient expert with a long-range mind in this way, in addition to leading him to definitely higher efficiencies. If carefully-made records are referred to from one year to the next and considered along with data on the fuel savings achieved on actual installations, the patient expert gains an idea of the amount of fuel which will be saved on particular types of installations by improving the CO_2 and stack temperature readings by given amounts.

Burner & Tank Standards by OHI Distribution Division

RECENTLY COMPLETED by an oil-burner standards subcommittee of the Distribution Division of OHI, a booklet has been published outlining what the dealers in the industry think should be incorporated into municipal ordinances affecting burner installations. Chairman of the committee was J. A. Collins, Frontier Oil & Refining Co., Buffalo, and vice-chairman for the East of the Distribution Division. Text of the standards is:

1. PURPOSE

The purpose of these standards is to insure the best in oil burner, heating and accessory installation by members of the Oil Heat Institute and to encourage better installations by all installers of equipment throughout the United States. These standards are therefore designed to give the user of oil burning equipment, a maximum of mechanical perfection and protection, and a maximum return in comfort on his financial investment, which will in turn improve the position of the Oil Heat Industry in the minds of the purchasing public.

2. APPLICATION AND SCOPE

These standards apply to oil burning equipment of all kinds installed in warm air furnaces, hot water and steam boilers, and miscellaneous industrial applications.

The standards are intended to prescribe reasonable provisions for the installation of oil burning equipment and are not intended to be hardship rules. They are based on minimum requirements to obtain good efficiency and to better protect life and property from fire or any other hurt connected with the installation and operation of the equipment.

Where the circumstances or conditions of any particular installation are unusual and such as to render the strict application of these standards impracticable, the proper local government official or the State Fire Insurance Rating Office having jurisdiction in the area should be contacted to obtain permission to modify the installation requirements so as to obtain a substantially equivalent degree of safe and satisfactory installation requirements for the particular burner equipment.

3. DEFINITIONS

For the purpose of these Installation Standards, the following terms shall be interpreted in accordance with the following definitions:

a. "Oil burner" shall mean any mechanical device for burning any grade of fuel oil.
b. "Oil burner unit" shall mean a combination of oil burner and heating boiler or warm air furnace manufactured by the same or different manufactruers.
c. "Domestic hot water system" shall mean any device which provides the customer with year around automatic hot water requirements.
d. "Fuel oil" shall mean any hydro carbon oils as classified in the effective issue of the United States Department of Commerce, Commercial Standard. CS 12-40 or subsequent.
e. "Oil burning equipment," shall mean oil burners and all tanks, piping, pumps, control devices, and accessories installed as a part of the burner installation.
f. "Lowest story" shall mean the basement or cellar and if there is no basement or cellar, the first story.
g. "Installer" shall mean any person, firm, company or corporation who shall install, or cause to be installed, any oil burner or oil burning equipment.
h. "Approved" shall mean approved by the Underwriters' Laboratories or by proper local or state authorities where ordinances regulating oil burner installations exist.
i. "Permit" shall mean any required permit issued by government authorities having jurisdiction in the locality.
j. "Official" shall mean the person designated by the local or state government as authorized to grant permits, or the local office of the State Fire Insurance Rating Organization.

4. APPROVED BURNERS

Approved oil burners shall be used. They shall bear a seal or some evidence of such approval.

5. PERMITS

Before starting an oil burner installation, the installer shall obtain permits from the proper authorities in localities where such permits are required by ordinances. Upon the completion of the installation, a certificate of electrical and installation standards approval shall be obtained from the State Fire Insurance Rating Organization or the local authority having jurisdiction in the installer's locality.

6. APPROVAL OF PLANS

Before installing or remodelling any oil burning equipment in other than dwellings, it is recommended that plans or sketches showing the relative location of burners, tanks, pumps, piping and elevations of buildings and their lowest floors or pits, relating to the proposed installation or alteration, be submitted for approval to the proper local government official where such approval is required, or to the Inspection Department of the State Insurance Rating Department having jurisdiction in the locality.

7. CONSTRUCTION OF TANKS

Underground tanks and tanks inside buildings shall be constructed of steel or wrought iron of a minimum gauge (U. S. Standard) in accordance with the following table, unless otherwise required by proper local or state authorities in accordance with local or state ordinances, except that for tanks of 181 to 275 gallons capacity, installed in buildings, and without masonry enclosures the minimum gauge shall be No. 14. Steel or wrought iron thinner than No. 7 gauge used in the construction of underground and enclosed tanks shall be galvanized.

(*Continued on page* 102)

Modern Dealer Accounting

Part III. The Whys and Hows of Record Keeping and Analysis

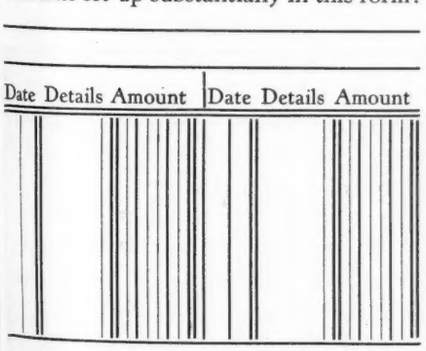
By

Lionel L. Jacobs

IN THE TWO PREVIOUS articles we have dealt with the important statements in which are collected in a manner best suited to give each individual operator a ready means of determining how his business is doing, all the many and varied items of daily activity.

To get these many items into the form needed for such statements, books of original entry are used and the bookkeeping methods and procedures are as varied as are the businesses for which they record the facts, and this is as it should be, for accounting has for its sole purpose the providing of information needed by someone interested in the business.

In the operation of the business, changes are constantly occurring in the condition of the assets, liabilities, and net worth, and these changes are entered in accounts set up substantially in this form:



The left side of this form is the Debit and the right the Credit side. Entries are made to record increases and decreases in two ways, thus:—

Asset Accounts—Such as Cash, Plant and Equipment, Office Furniture, Persons and firms owing money to the business. In Asset Accounts—

Increases are entered on the Debit Side.

Decreases are entered on the Credit Side.

Liability Accounts and Net Worth Accounts—Such as Expense, Persons and firms to whom the business owes money, Capital Stock. In Liability Accounts—

Increases are entered on the Credit Side.

Decreases are entered on the Debit Side, and thus develops double-entry bookkeeping in which every transaction is recorded by a debit or credit entry in the Asset Accounts and an entry on the opposite side in the Liability Accounts.

As a simple example, a desk is purchased and so the Asset Account for Office Furniture is debited with the increase and the Liability Account of the Brown Furniture Company to whom the business owes money for the desk is credited with the increase. When Brown Furniture Company is paid their Liability Account is debited with the decrease and the Asset Account Cash is credited with the decrease. Thus the amount of cash is reduced but an equivalent asset remains in Office Furniture Account.

If every transaction is thought through on the basis of this example, there can be no confusion as to procedure.

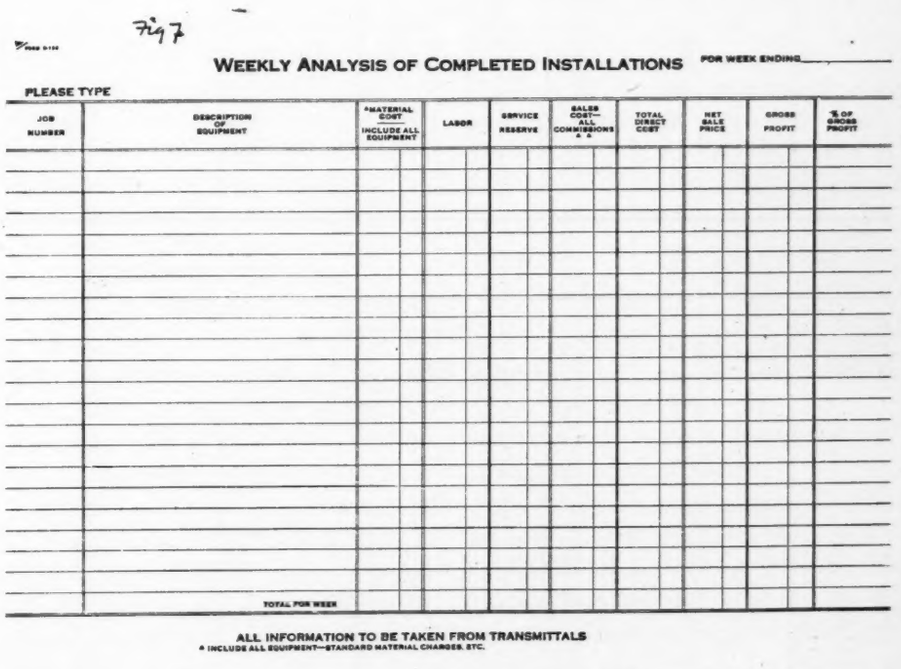
Accounts are collected together in a book called a Ledger. Now-a-days several ledgers are kept—thus all the Asset Accounts in an asset ledger and all Liabilities in a Liability Ledger, and a Purchase Ledger, Sales Book, and so forth. Frequently a set comprises an Accounts Receivable Ledger, an Accounts Payable Ledger and a General Ledger.

Such separation facilitates on the one hand the totalling for some statement, of all similar accounts and on the other the examination of one or more items included in some total in a statement that seems to need further investigation.

Usually wherever subsidiary ledgers are maintained, the totals of these subsidiary ledgers are posted to what are termed Control Accounts in the General Ledger, so that a trial balance can be taken of the General Ledger to cover all transactions.

Two more books are needed to complete the set—a Journal and a Cash Book. The Journal is designed to record the particulars of every transaction except the movement of cash, which is entered in the Cash Book. As a matter of fact, a complete set of books could be maintained with a Journal, a General Ledger and a Cash Book.

However, as items increase in number and in complexity, the preparation of statements and the quick examination of different phases of the business are more readily accomplished when several subsidiary Ledgers are maintained. Then the Journal is used to record transfers, adjustments and any and all items not belonging to the group of accounts carried



WEEKLY ANALYSIS OF COMPLETED INSTALLATIONS FOR WEEK ENDING_____

PLEASE TYPE

JOB NUMBER	DESCRIPTION OF EQUIPMENT	*MATERIAL COST INCLUDE ALL EQUIPMENT	LABOR	SERVICE RESERVE	SALES COST—ALL COMMISSIONS * &	TOTAL DIRECT COST	NET SALE PRICE	GROSS PROFIT	% OF GROSS PROFIT
	TOTAL FOR WEEK								

ALL INFORMATION TO BE TAKEN FROM TRANSMITTALS

* INCLUDE ALL EQUIPMENT—STANDARD MATERIAL CHARGES, ETC.

SIGNED_____

in the subsidiary Ledgers. From the Journal, items are transferred to the General Ledger, or in some cases to one of the other books and thence to the Control account in the General Ledger.

Care should be exercised in using the Journal not to defeat the purpose of the subsidiary books (in collecting all of certain types of transactions) by carrying some items direct to the general ledger that should go through the subsidiary books first.

If accurate figures are required for some cost analysis, it is well to add to the cost figures abstracted the total of any unused items and compare the result with the Control Account concerned. Any difference may show up figures that have slipped through the Journal into the Control Account direct.

Just as an analysis and constant comparison of overhead items (as shown in Fig. 5) is valuable, so to the oil burner dealer, is an analysis of installation costs. If the costs of every installation are entered on a form such as shown in Fig. 7, it is a very simple matter to abstract and compare similar items and to know exactly how costs are running.

Thus by collecting costs of approximately similar sales and recording them as percentages in a statement such as shown in Fig. 8 a surprisingly valuable record develops.

Fig. 8

Type of Job	Percentages											
	January				February				March			
	L	M	C	S	L	M	C	S	L	M	C	S
Model A & 275												
Model B & 275												
Model C & 275												
Model A no tank												
Model B no tank												
Model C no tank												
#1 plus S & W												
#2 plus S & W												
#3 plus S & W												
Model A & 550												
Model B & 550												
Model C & 550												

L—Labor M—Material C—Commission S—Spread

Fig. 9

Type of Service	January Percentages					Feb.
	No. of calls	L	M	S	Policy	
C.O.D. & Charge						
Contract Guarantee						
Final Inspection						

Fig. 10

CASH RECEIPTS

Date	Account	Partics.	Credits				Debits				
			General Ledger	Sales	Interest	Accounts Receivable	Interest	Discount	Freight	Coll. & Exch.	Cash

CASH DISBURSEMENTS

Date	Account	Partics.	Debits						
			General Ledger	Purchases	Freight	Interest	Accounts Payable	Discounts	Cash

Judgment must be used in grouping. The small disparity between say a Model A with a 3½ gallon tankless S & W Hookup and one with a 5 gallon, or the difference in cost between a 1" and a 1¼" circulator averages out in the percentages, but one would not include in the same group a 3½ gallon tankless and a 120 gallon tank job. Every operator can readily determine how best to group sales for his particular operation.

Of course, if absolute accuracy is desired and sufficient help available, exactly similar items only could be collected. It is questionable whether the cost would warrant such perfection.

Service Expense Complexities

Service expense also can and should be analyzed similarly. It is complicated with respect to certain types of service by predetermined and (until the end of the year) undetermined factors. C.O.D. service or charge service (if any one is cursed with such an affliction) is a simple transaction readily recorded. It comprises Labor Cost, sometimes Material Cost, and Spread for a total of cash collected (we hope) or charged (and frequently not collected).

But, it happens to all of us that occasionally Labor and Material and Spread collected do not cure the trouble for which service was paid. Some day we'll write a book on WHY—for the present we'll accept the fact and go back on the job. A part may be found defective and we collect for it and the labor involved. More frequently it is a matter of labor (adjustment) and because it was supposed to have been, and probably should have been, fixed on the previous visit, the customer refuses to pay more. What to do with the cost in our accounts?

If we are wise we'll record it separately and thus will know how much we are spending in good will building. Later analysis will tell us what percentage to allow to cover policy adjustments and how much can be saved of this expense by better field operation and maybe supervision.

Also by separating it we keep our cost of service figures "on the beam."

Contract service and guarantee service present a minor problem because in both these types we give unlimited service for a pre-determined figure, and so can only approximate our spread (if any) on a monthly basis.

There are various methods of handling the accounting on these items. The writer believes the correct way, where a summer clean-up is done under a service contract is to determine the price (not cost) of such a clean-up and set it up on the books in the month the clean-up is done. The balance of the service contract income should then be set up in amounts per month obtained by dividing the balance after deducting for summer clean-up by the number of unexpired months of the contract. Guarantee should be set up monthly in amounts obtained by dividing the guarantee reserve by the number of months unexpired. No material will be set up on guarantees because the manufacturer replaces parts defective in the guarantee period.

Prefer Fiscal Year Basis

It materially simplifies the accounting of service and some other items if the business is operated on a fiscal year basis ending May 31, (the nominal end of the heating season) and all service contracts made to terminate at that date.

Final inspection deserves a little consideration. It is unquestionably a Service Department function (where Service and Installation Departments are separated), but the cost, in the writer's opinion, should be charged to the Installation Department, as any work and material needed are undoubtedly the final touches to the installation operation.

A very convenient form for analyzing service is shown in Fig. 9.

And now we have one more phase of our accounting as represented by the Cash Book, which may be very simple, one book with date, particulars, and cash columns on the Debit and Credit sides. Or as is more generally the case, it is divided into two books, Cash Receipts Book and Cash Disbursements Book, and the pages in these books may have any number of columns to collect in one book all the entries needed to complete the many and varied cash transactions.

Fig. 10 illustrates fairly common examples of Cash Receipts and Cash Disbursements forms.

The determination of how many and what columns to use in the Cash Books as in all books of original entry is a matter of facilitating records and reducing labor. The scheme will vary with the particular businesses concerned.

Little has been said in these articles with regard to Fuel Oil Accounting. This is because to cover all aspects of retailing alone several articles could be assigned to it, and more especially because so many of the dealers who may be interested in these articles handle fuel oil on a commission basis for which the accounting is exceedingly simple.

In concluding this, the last article of the series, the writer hopes that some few operators may be induced to keep proper records and thus avoid the senseless price cutting that inevitably comes from lack of knowledge of costs.

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Get This Harvard Booklet On Retail Fueloil Marketing

OF MORE THAN USUAL significance to the oilheating industry is the new booklet just published by Harvard University, "Retail Marketing of Furnace Oil," by Professor Harvey P. Bishop.

The study that lead to the publishing of this work was financed primarily by ten major oil companies at the instigation of the Atlantic Coast Oil Conference. For several months Professor Bishop called on men at all levels of the industry's activities and the booklet contains his conclusions on a number of current industry problems.

The cost of the booklet is 50 cents. Order it from the Graduate School of Business Administration, Harvard University, Soldiers Field, Boston 63, Mass.

◈

Albert W. Brown has joined the sales staff of Research Products Corp., Madison, Wisconsin. Recently discharged from the Army, Brown will specialize in aiding dealers in their local sales promotion campaigns. He formerly served 15 years in the Philgas department of Phillips Petroleum Corp.

Dr. William J. Sparks, associate director of the Chemical Division of the Standard Oil Development Co., Elizabeth, N. J., has been elected chairman of the American Chemical Society's North Jersey Section.

IBR Study Shows Shifts in New Home Heating Plants, Fuels

WARM AIR AND BOILER HEATING show considerable geographic shifts in 1946 new homes compared to those of 1940, while the overall popularity of the two types has changed only slightly, in favor of boilers, according to a comprehensive survey conducted early this year by the Institute of Boiler and Radiator Manufacturers, of which R. E. Ferry is managing director.

The leveling process is quite pronounced, as shown in the table on this page. The Midwest, perpetual stronghold of warm air, is swinging slowly but perceptibly toward wider acceptance of boiler heating, while four of the six Eastern areas studied show improvement in warm air application.

The survey was limited to 11 areas, all east of the Mississippi and north of the Ohio Rivers, and had a considerably stronger urban than rural flavor. Interviews numbered 757, of which 402 were operative builders, 205 were general building contractors and 150 were architects. They were asked heating and fuel characteristics of all the homes they built in 1940 and those they were to build in 1946.

In 1940 the groups had built 54,387 homes, divided: operative builders 38,145, general builders 6,216 and architects 10,026. In 1946 the same individuals or firms are building 71,036 homes, divided: operative builders 51,397, general building contractors 7,995, architects 11,644.

In the table the figures on the individual areas are more significant, and more representative, than those in the last column, which shows simple averages of the 11 sections. These over-all averages are not too useful, since the number of interviews in each area was not necessarily in proportion to the relative significance of that area to the whole picture. However, there were enough in each area to be representative of that particular spot.

Gravity heating systems, either air or hot water, appear to be slipping fast in new home applications, in favor of a forced circulation type. Combined gravity warm air, gravity hot water and steam systems for new homes dropped from 44% in 1940 to 22% in 1946, while forced circulation systems rose from 56% to 77%, according to the study. (The figures in the columns do not always add to 100%, for there were some "unknowns" and a few with panel heating.)

The tabulation of fuels used, and to be used in homes now building, parallels rather generally the percentages shown in the table on page 47 of the July issue, which reported impressions of oilheating dealers in various parts of the country.

In the absence of low priced equipment or promotional activity by the oilheating industry, it is understandable that oil loses some ground to gas in new home work. With the majority of oilheating installations in the next five years to be in existing, rather than new, homes, however, total oil installations can be expected to considerably exceed total gas jobs.

The principal shift in the new home oil picture, according to this study, is in the Midwest, where this group of builders in 1940 used oil in 16% of their houses, and in 1946 used it in only 7%. In the East, omitting Philadelphia, oilheating in new homes moves up from 55% in 1940 to 57% in 1946. Coal is again shown to be rapidly losing ground for home heating.

I.B.R. Summary, Heating Plants and Fuels, 1940 and 1946 New Homes
Based on 757 Interviews with Architects and Builders of 125,423 Houses

	New England	New York State	Metrop. New York	Penna. State	Metrop. Philadelphia	Baltimore Washington Virginia	Michigan	Ohio	Metrop. Chicago	Wisconsin	Minnesota	All Sections Average
HEATING SYSTEM USED												
Percent of Total												
Gravity Warm Air—1940	17%	26%	9%	15%	22%	13%	50%	53%	41%	67%	12%	30%
1946	6	2	1	5	8	..	13	37	17	66	10	15
Forced Warm Air—1940	19	62	31	20	23	43	46	32	46	14	79	37
1946	34	73	59	34	38	38	81	30	67	30	69	50
Total Warm Air—1940	36	88	40	35	45	56	96	86	87	81	91	67
1946	40	75	60	39	46	39	94	67	84	96	79	65
Steam—1940	28	1	50	16	1	..	..	1	..	..	..	9
1946	11	..	21	17	..	..	..	..	..	..	..	4
Gravity Hot Water—1940	2	3	1	10	9	7	..	5	..	16	3	5
1946	..	..	4	6	6	2	..	..	1	..	11	3
Forced Hot Water—1940	34	8	10	40	45	37	4	9	12	3	3	19
1946	48	25	12	36	47	53	6	33	13	3	7	27
Total Boiler Heating—1940	64	12	60	66	55	44	4	15	12	19	6	33
1946	59	25	37	59	53	59	6	33	14	3	18	34
FUELS USED												
Percent of Total												
Oil—1940	72	26	66	35	72	75	5	4	15	12	43	39
1946	73	34	61	52	45	75	6	6	9	8	7	34
Gas—1940	19	36	8	7	19	11	34	56	36	5	38	24
1946	23	60	30	22	53	18	82	59	70	42	91	50
Coal—1940	9	38	26	59	9	14	61	40	49	83	20	37
1946	4	4	8	24	2	5	12	35	18	41	..	14

Performance More Significant Than Oil Specifications

By
R. J. Bender*

THE DEVELOPMENT OF MODERN engines and of high speed heavy duty machinery has brought about radical changes in the nature of fuels and lubricants. No longer does the art of the petroleum refiner restrict itself to separating and properly purifying the components of crude oil. Today finished petroleum products have become highly complex mixtures of hydrocarbons and other chemicals combined so as to fit most suitably the new and exacting requirements; for that purpose new and more appropriate refinery processes were developed.

The complexity of these new products, as well as the type of service expected, has made it increasingly difficult to evaluate their quality and their suitability by the simple method of checking their physical and chemical properties.

More and more the industry appears to demand data on the actual performance of the products in a machine typical of that in which they will be applied, and "Performance Tests" gradually seem to replace "Specification Requirements." To realize how widely this new tendency has already spread, it is sufficient to glance at the current edition of the handbook of the "Coordinating Research Council" a cooperative organization sponsored jointly by the American Petroleum Institute and the Society of Automotive Engineers. Scarcely any petroleum product today, applied to the needs of the automobile or the airplane, is accepted as satisfactory without an exacting "performance test."

Motor fuel, for a long time, was tested for its anti-knock quality in a standard laboratory engine under definite operating conditions; but it was found that the octane rating thus determined was no indication of the anti-knock quality of the gasoline under the diversified conditions arising during actual road driving; nowadays "Road Performance Tests" are conducted and their results supersede the octane ratings obtained by either the "Research" of the "Motor Method." Likewise the vaporlocking tendency of a gasoline is no longer determined by the Reid Vapor Pressure test but by an actual road test followed by a "hot-room" test.

Aviation fuels are rated after performance tests in full-scale aircraft engines.

For a long time Diesel Index or Cetane Rating, when listed with the other physical characteristics of a Diesel Fuel, permitted a satisfactory prediction of manner in which that fuel would perform, until it was found that no reliance could be placed upon such data when applied to synthetic fuels or to certain petroleum fuels containing chemical additives; here again "performance tests" will be the inevitable criterion of Diesel Fuel quality.

R. J. Bender

In the world of lubricants the same evolution has taken effect. No longer are motor oils selected on specifications alone; they must pass a rigid 480 hour performance test after which every part of the engine is measured and examined. Gear Oils are submitted to such performance tests as the "Timken," "Chevrolet" or "Chrysler" tests during which their load-carrying, wear and stability characteristics are proved under variable conditions of speed and load. Ball bearing greases are tested in a new machine duplicating in speed and in temperature actual road conditions before they are pronounced fit, or rejected.

The Navy has developed for its Navy Special Fuel Oil a "heater test" which permits it to predict how the fuel will behave in the heater and the pipings of an oil-firing plant.

This tendency is not restricted to the petroleum industry. Paints, varnishes, moisture-proofing compounds, all have to pass "performance tests." Department stores with nation-wide distribution test for actual performance practically every new article of merchandise distributed through the stores. The Fire Underwriters Laboratories have for many years conducted "performance tests" for the most diversified sorts of products, principally in view of eliminating their fire hazards, but with the incidental appreciable result of improving their quality. Oilburners in particular are tested there with the lowest grade of fueloil obtainable in the class for which the burners are to be approved.

It seems pertinent to bring out these facts at a time when oilburner manufacturers, conscious that existing fueloil specifications are no longer adequate, apply themselves, in cooperation with the oil refiners, to set up new specifications for the various grades of fueloils, to be submitted for the approval of the Bureau of Standards.

Evidently any specifications based solely on physical or chemical properties would either be futile or would impose upon the refiner certain restrictions to his manufacturing processes that would prove highly undesirable, economically, to further progress of oilheating. On the other hand a "performance test" in a burner typical of the sort in which the oil is intended to operate would be the advisable criterion. It would thus be up to the Refiner to produce by any method he may see fit a fuel suitable for this burner, while the burner manufacturer would constantly strive to develop burners suitable for a greater, and hence more economical, range of fuels.

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Floyd Talmon has resigned as sales manager of the Toridheet Division of the Cleveland Steel Products Corp., Cleveland.

F. W. Hutchinson, widely known radiant panel heating authority, has been named consultant to the Minneapolis-Honeywell Regulator Company, according to John E. Haines, vice-president in charge of the commercial controls division. Mr. Hutchinson will work on the large scale test program being conducted by M-H to help determine proper methods of controlling radiant heating in all types of buildings.

*Sinclair Refining Co., New York.

Indoor Comfort *emblem, shown at Chicago*

Warm Air Industry Plans Strong Research and Marketing Program

PLANS FOR A STRONG ATTACK on the heating market were unfolded to the industry at the annual mid-year convention of the National Warm Air Heating and Aid Conditioning Association, held in Chicago, June 25 and 26. Coupled with the merchandising plans is a new research program at the University of Illinois, involving the construction of a new research residence.

The merchandising program has a strong educational slant and will be conducted by the Indoor Comfort Educational Bureau of the association. In announcing the new program to sell the need for complete year-around indoor comfort, James R. Scott, chairman of the association's Publicity and Merchandising Committee, said the American in the past have been aware of only one factor of indoor comfort, that of heating and cooling of air. There are, however, six other factors which include humidified or dehumidified air, circulated air, fresh air, pure air, clean air and enough air.

The entire warm air heating and air conditioning industry including the manufacturers, jobbers and dealers and the research center at the University of Illinois will co-operate in the program, said Scott, in telling the story of true indoor comfort to the American people including architects, builders, owners of single dwellings, multiple dwellings, theaters, hotels, restaurants, schools, churches, factories, office buildings, hospitals, railroad and bus stations, airports, trains, planes, buses, stores or any other types of shelter, either permanent or temporary.

Keeping in accord with the indoor comfort program the Board of Directors of the Association adopted a new emblem which was displayed for the first time at the convention by Scott. The new emblem will be used prominently in advertising campaigns by the Association and its members, and in other various ways such as signs, displays, etc.

Scott also announced the publication of a consumer's booklet on the subject of indoor comfort which will be distributed to the public through association members within the next few months.

Another feature of the convention which was of great interest was the announcement of the Association's new research residence by Frank L. Meyer, Chairman of the Research Advisory Committee.

The residence will be built this fall at the University of Illinois in order that experiments on indoor comfort conditions in the newest type of house can be conducted. The Association has another research residence at Illinois which was built in 1924.

The new residence will be generally modern in archietectural style, incorporating various features of exterior design, according to Meyer. Outstanding will be the solar effect obtained through the use of very large windows. The house will be so constructed to simulate one with and without a basement.

Some of the unusual construction features will be removable wall and ceiling panels so as to test the air distribution and various types of insulation material.

The one-story structure will have a combination living and dining room, two bedrooms, a kitchen, a utility room and a one car garage, and will be completely equipped with the latest household living conveniences and furnishings, and equipped with instruments for testing.

At an Association luncheon on the first day of the convention, Dr. Arthur C. Willard, who retired as President of the University of Illinois on July 1, was presented a gold-framed testimonial by Frank E. Mehrings, President of the Association, in honor of 31 years devoted to warm air heating and air conditioning research.

In a speech following the presentation, Dr. Willard urged the Association to continue with added emphasis its research program which began at the University of Illinois in 1917.

Dr. Arthur C. Willard, *retiring president of University of Illinois, receives from Frank E. Mehrings, president of the Assn., a testimonial honoring his service to heating and airconditioning research.*

Representing the federal government at the convention was C. Ray Davisson, Deputy Director, Building Materials Division, Civilian Production Administration, and Richard Cook, Office of Price Administration. In commenting on the nation's housing shortage, Davisson said that a million and a half more workers are needed in the building field. Another critical item is warm air furnaces which Davisson said would not meet production requirements this year. The June production of warm air furnaces was given as 53,000 as against the C.P.A. monthly requirement for 1946 of 65,000.

The Association's application engineering program for manufacturers, jobbers and dealers in the industry was described by Guy A. Voorhees, Application Engi-

neering Director. Started four months ago by Voorhees, conferences have already been held in Peoria, Milwaukee, Des Moines, St. Louis, Indianapolis, and Akron. According to Voorhees, the first conferences were experimental and from now on a regular schedule will be followed commencing in September. To be held throughout the nation, the conferences will provide the latest practical information on design and installation of indoor comfort equipment for all forms of shelter.

Presiding over the opening sessions of the convention was President Mehrings who told the assemblage that the industry faces a bright future.

Other features of the convention program were reports by W. D. Redrup, Chairman of the Installation Codes Committee, Professor L. G. Miller, Chairman of the Technical Education Committee and Professor S. Konzo of the University of Illinois.

In announcing plans for the next meeting of the Association, Boeddener said the annual mid-winter convention would be held at the Hotel Cleveland, Cleveland, Ohio, on January 29 and 30, 1947. This meeting will be held at the time of the International Heating and Ventilating Exposition to take place in Cleveland January 27-31.

Oil Production At All-Time Peak

REGARDLESS OF THE fact that military needs for petroleum are very much below what they were in the period of hostilities, world production of oil is currently running about 4%, or 300,000 barrels daily, higher than the wartime peak reached a year ago, according to Howard Page, manager of the Coordination and Economics Department, Standard Oil Co. (N.J.), speaking before the Marketing Division of the American Petroleum Institute in Denver July 10. Refining operations, however, are not quite as high as production, being but 1% above the wartime peak, with the extra crude going into stocks.

The Denver meeting had three official sessions. The first was held by the Program Committee, planning activities for the annual meeting at Chicago in November. Speakers for the Marketing Division at Chicago are to include one on diversified selling at service stations, others on lubricating oil and Diesels and a panel discussion on heating oils and oilheating. The next session was by the Lubrication and Special Study Committees. Recommendations included one that the Division employ a full-time paid director, another that regional meetings be held for public discussion of marketing problems, and that five regional subcommittees be appointed. The third and final session had three speakers, who, in addition to Page, were Robert Gray of FUELOIL & OIL HEAT who outlined six current problems in fueloil and oilheating, and Wallace Hughes, automotive editor of Hearst Publications with a chart talk on the results of a widespread survey on public impressions of service stations. Pertinent paragraphs from the Page paper are:

In marked contrast to the postwar decline in most so-called heavy industries, the production of crude petroleum and equivalents is now at an all-time peak! The present level worldwide, exclusive of Russia, is higher than the wartime peak reached a year ago by 4%, or 300,000 barrels daily. In the United States, production is above the wartime peak monthly production by about 1%, in spite of the shutback in Navy Reserve production at Elk Hills of about 60,000 b/d.

Relatively, refining operations are not quite as high and, therefore, crude oil is going into stocks this year compared with heavy drafts on crude stocks last year. Nevertheless, worldwide refinery runs are about 1% above the peak wartime runs of a year ago, the gains in foreign areas being more than sufficient to offset a decline in the U. S. In the United States runs are 175,000 b/d below the wartime peak, or 3½%. Almost all of this decrease is in California, resulting from the shutback in Elk Hills production, elimination of tank car movements of West Texas crude, and reduction of local crude stocks to approximately minimum working levels. In foreign areas, however, new and rehabilitated capacity has been brought into operation to the extent of about 250,000 b/d. An analysis, by areas, indicates that foreign refineries are at capacity and domestic refining operations are within 1%-2% of maximum economic capacity.

In forecasting the future, we start with the present demand for products. Outside of the United States, and again excluding Russia, we have projected an increase of 23% in 1950 compared with this year. In volume this is about a 550,000 b/d increase. Breaking this down into residual and all other products, we find that the residual increase is only 14%, or 130,000 b/d, while other products—principally gasoline, kerosene and distillates—increase 29%, or 420,000 b/d. The reason the residual increase is relatively small is that requirements in 1946 are abnormally high as a consequence of the war and the coal situation. We predict that by 1950 the increases in foreign crude production and refining will at least equal the increases which have taken place in foreign demand. The reason is apparent—foreign crude oil can be obtained at less cost than domestic crude oil. However, in 1947 and 1948 we expect foreign demand to outstrip increases in foreign refining capacity because of unavoidable delays in completing new foreign refining facilities on the large scale indicated to be required.

Most of the marketers here are interested in the foreign projections only to the extent that they influence operations in the United States. Exports from the United States are the end result of the foreign supply and demand situation. Our estimates of product exports are as follows:

1946	350,000 b/d
1947	375,000 b/d
1948	400,000 b/d
1949	300,000 b/d
1950	180,000 b/d

Turning to the domestic picture, we find that 1946 demands are running well ahead of 1941. The civilian domestic requirements for the year, based on actual to date and estimates for the last half of the year, are compared with 1941 as follows:

Gasoline	up 5%
Kerosene	up 7%
Heating Oils & Diesels	up 18%
Residual Fuel	up 19%

It should be borne in mind that these comparisons are for civilian requirements only and do not include military or export demands, which, in most cases, have increased even more over 1941.

Looking to the future, the following changes in domestic civilian requirements from 1946 are foreseen:

GASOLINE: Civilian aviation gasoline requirements are expected to increase so rapidly that accurate predictions are difficult to make. In general, we look for a 1948 demand double that of 1946 and in 1950 almost three times that of 1946. Civilian use of jet propulsion fuel is not expected to be an appreciable factor in this period.

33 Million Cars in 1950

Civilian motor gasoline consumption estimates are based on the following assumptions: (1) that the number of passenger cars in use in 1948 will be 4¾ million more than the average in use this year; (2) that in 1950 the cars in use will be 33 million, which is 3 million higher than 1948 and 7¾ million higher than this year's average. Based on Census Bureau estimates of population trends, the figures we are using indicate that in 1950 there will be a car in use for every 4.2 persons compared with one for every 5 persons in 1941.

KEROSENE: Civilian demand for kerosene in 1950 is expected to be about 7% higher than in 1946. The principal gain will be in demand for heating purposes. Kerosene consumed by tractors is expected to decline about 2 million barrels as a result of competition from diesel units. Other uses—such as fuel for cooking, farm machines, illumination, and civilian jet planes—are forecast to increase about 2 million barrels per year during this period.

DISTILLATE FUELS: There are two principal categories in demand for distillate fuels—home heating and diesel engine use. In 1941, home heating use accounted for approximately 70% of the total domestic demand, while diesel engines used about 16%. By 1950 it is estimated that the relative position will have changed to about 60% for home heating and 35% for diesel engine use. In the home heating field, it is estimated that the average number of burners in use in 1946 will exceed the number in 1941 by almost 400,000, or 16%. In 1950 it is expected that burner installations will exceed those of 1946 by about 1,160,000, or an increase of 44%. The increase in fuel requirements, however, is expected to be only 37% during this period, mainly because of the increased efficiency expected in new burners. This increased efficiency will be important in maintaining and expanding the use of heating oil for home heating in the face of active competition from other fuels.

Civilian diesel fuel use is expected in 1950 to be double that of 1946, whereas the use in 1946 is double that of 1941. Large increases are expected in the category of railroads (railroad use in 1950 is projected at 9 times that of 1941), vessels, smelters, mines and manufacturing industries, tractors, and construction machinery, etc. Truck and bus consumption in 1950, it is believed, will be many-fold that of 1946. Of the more than 100% gain anticipated in total diesel use, ¼ will be due to the construction and use of diesel-driven trucks.

RESIDUAL FUEL OIL: The civilian onshore demand for residual fuel oil, excluding bunkers, is expected to increase about 6% in 1947 and the same in 1948 over the 1946 level. However, in 1949 it is projected to drop to the present level and fall about 11% below that in 1950. This is based on the assumption that industrial activity in the United States will decline in these two years, particularly in 1950.

Utilize All Facilities

As to the accuracy of estimates—it cannot be claimed that, over the period described, the error will be less than 5% plus or minus. If actual consumption turns out to be 5% higher than estimated, the supply difficulties in all branches of the industry will be strained to the utmost. If consumption is 5% less than estimated, it would still be at a much higher level than any previously experienced and will require the utilization of practically all efficient facilities.

Summarizing, estimated consumption of the major petroleum products in 1950 compares with 1946 as follows:

	Inc./(Dec.) 1950 over 1946
Foreign Requirements	23%
Domestic Civilian Requirements	
Gasoline	23%
Kerosene	7%
Distillate Oils	
Heating	37%
Diesel (Incl. Bunkers)	110%
Residual Fuel Oil (Incl. Bunkers)	(11%)

In conclusion, our forecast indicates that the marketers would be well advised to prepare themselves for substantial increases in the consumption of all petroleum products, with, perhaps, the exception of residual fuel oil in certain categories of consumption.

Housing Authorizations Slow; Material Supplies Improving

FROM JANUARY 15, when preference ratings were first inaugurated for the Housing Program, through June 28, a total of 576,721 houses and apartments were authorized for construction. Of these, 45,705 were authorized in June, or less than half the monthly average of 118,000 in the prior months. Without investigating the reason for this slower rate, it is somewhat obvious that builders are distressed over difficulties in getting certain bottleneck materials, and distressed over the worsening attitude of labor, to the point that they want to look a little before committing themselves much farther.

This is probably a temporary slowdown, for materials are starting to show up in better volume, and Government is taking additional steps to channel scarce items to home building. Moreover, the number of permanent dwelling units actually started in construction during the period to May 31 almost equalled the 350,000 started in the first five months of 1925, our all-time peak building year.

Nationwide lumber production for May was over 3 billion board feet for the first time since August 1944. Total 1946 requirements, however, are placed at 37 billion, of which 16 billion apparently were produced in the first six months. The cast iron order, predicted last month, has now been issued, channeling foundry output to farm machinery products and Veterans Housing materials under a "certified" order system. This was brought about through the issuance of Direction 12 to Order M-21 (CPA). The building items specifically listed for preference are cast iron pipe and fittings, radiation, warm air furnaces and floor furnaces, low pressure residential boilers, drain pipe, steam fittings and malleable fittings. Oilburner castings are not included.

The oilheating industry got what was considered a setback when Supplement 1 to VHP-1 was amended July 2. The new provision is that conversion oilburners are exempted from the restrictions of VHP-1 only when they are installed in an existing boiler or furnace—not in a new one. Actually, this was the intent originally but a loophole had permitted them to be installed in new boilers also, without restriction as to price.

CPA approvals for construction of buildings other than housing were being

held down rather tightly as the result of a new policy started in late June. While total non-housing approvals since the controls started March 26 have been over $1½ billion to $833 million rejected, the ratio during the past four weeks has been about two rejections to one approval. It is important to recall, however, that nearly all oilheating appeals are being granted since they use materials not needed in small homes.

CPA is cracking down on violators. In the month of May alone, some 2,350 construction jobs begun in violation of VHP-1 were stopped by the agency. About 40% of the stop orders were on commercial buildings, 10% on amusement buildings and 50% on small residential work.

FHA has announced that building costs must come down as the supply of materials increases. Commissioner Raymond H. Foley explains that the agency will exert continuous pressure on prices, as it establishes mortgage ceilings and approves sales and rental figures for dwelling units receiving priority aid.

Highest "Big Inch" Bid Contemplates Oil Operation

BIDS TO PURCHASE or lease the two Big Inch lines were opened in Washington by the War Assets Administration on July 31. Out of a total of 14 bids submitted, most were based upon using the lines for bringing natural gas to the East, although there were so many qualifying provisions and joint buy-lease considerations that it will take some time to fully evaluate the bids, and probably several months before a deal is made. Final approval must come from Surplus Property Administration and from Congress.

It is enlightening and encouraging to oilheating men, however, that the most favorable bid at first glance was based upon using the lines as a common carrier for crude petroleum and products. The offer was made by Frank M. McCraw of Anniston, Alabama, who proposes to pay a total sum of $146 million, less four per cent annual depreciation from the time the lines began operation until turned over to him.

He would operate both lines as independent common carriers. He would deposit $8 million of the purchase price as an initial payment, put $12 million into working capital and product inventory, pay on account 8¢ a barrel, with a minimum rate of $3 million a year. These payments would apply against the purchase price, with interest at 4 per cent, and the Government would retain title to the properties until cleared.

Fractional Horsepower Motor Production At New Peak

PRODUCTION OF FRACTIONAL horsepower alternating current motors reached an all-time peak in May, according to the best available statistics recently released by Civilian Production Administration. Output in May reached 1,653,744 units, of which 837,196 were 1/20 to 1 hp. This is the greatest production of this size of motor ever recorded. Total production of all sizes of fractional hp. motors is 63% above the average monthly production of the past year.

Approximately 100,000 of the medium and large size motors represented motors for use in blowers and oilburners for house heating purposes, compared with April production of 78,000 of this type, according to CPA.

Labor problems within the industry hampered production during the first quarter of 1946, but with most of these problems now settled, the industry looks forward to a period of higher output. One plant, kept idle by a strike for over five months, was reported to have resumed operations on July 8.

The impact of recent shortages in copper wire, caused by strikes in copper mines, smelters and fabricators, was not reflected in May production. However, these shortages as well as shortages of silicon steel sheets, are expected to reduce June and July production about 20%, according to CPA estimates.

These production cuts are expected to be temporary because most of the copper strikes have been settled and the supply of copper wire should increase sometime in August, CPA said. The silicon sheet shortage is more desperate. One producer, who makes motors for his own use, reports having resorted to using black steel sheets for his motor laminations.

Order backlog for fractional horsepower AC motors was estimated at approximately 20 months' production. However, CPA officials and industry members emphasize that order books are heavily padded.

Shipments of Fractional H.P. Motors

Period	Units Total	Under 1/20 hp.	1/20-1 hp.	Unfilled Orders At End of Period
*1937 Mo. Average	1,546,160	981,051	565,109	
*1939 Mo. Average	885,097	429,037	456,060	
1943 Mo. Average	244,400	n.a.	n.a.	
1944 Mo. Average	407,476	n.a.	n.a.	
1945 Mo. Average	697,795	267,338	430,457	
1st 6 months (Mo. Aver.)	545,731	203,498	342,233	
July	681,991	246,854	435,137	
August	703,698	249,833	453,865	
September	686,712	271,609	415,103	
October	888,904	363,058	525,846	
November	1,058,715	423,479	635,236	
December	1,079,134	432,230	646,904	
1946				
January	873,376	549,539	323,837	24,093,148
February	849,942	559,360	290,582	26,979,554
March	1,163,881	586,835	577,046	30,275,343*
April	1,508,427	821,616	686,811	30,884,665
May	1,653,744	816,548	837,196	31,682,072

Source:
*1937 and 1939 figures from Census of Manufacturers.
All other from CPA Industry Division.

The accompanying table shows a comparison of fractional horsepower motor production in the post-war period, the war years and pre-war.

24-Inch Gas Pipeline OK'd by FPC, Texas to California

THE FEDERAL POWER COMMISSION has approved a 1,280 mile pipeline to carry natural gas from West Texas, primarily from the Permian Basin, to Southern California. The line will be of 24 inch size to the Arizona-California state line, and 30 inch diameter across California. The larger California diameter is to provide storage in the line at the discharge end.

Expected to be completed and operating before the end of 1947, the line is

to cost $70 million and at capacity operation will handle 305 million cubic feet a day. The Southern California utilities buying the gas will pay 15c per Mcf at the start and 14c after four years.

While Southern California has had little oilheating for some years and is not considered a distillate fueloil market of consequence, this new gas line is of considerable interest to oilheating men, for it will drain from Texas some of the surplus gas that has been building pressure to take natural gas to the East.

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U. S. Department of Labor Fueloil Prices May

FIELD INVESTIGATORS for the Department of Labor monthly check prices of principal fuels in several cities in each section of the country. Getting retail quotations from various suppliers in each market, the prices are averaged and published. Those in the table that follow were taken May 15 (cents per gallon):

	Range	*No. 1*	*No. 2*	*No. 3*
Boston	9.54	9.40	8.10	8.10
Bridgeport	9.30	...	8.00	...
Fall River	...	...	8.55	...
Manchester	10.10	...	8.80	...
New Haven	9.30	...	8.00	...
Portland, Me.	9.20	9.10	8.00	...
Providence	9.30	9.22	8.10	...
Baltimore	...	8.85	8.00	...
Buffalo	9.90	9.90	9.00	9.00
Newark	...	9.00	8.00	8.00
*New York	...	...	8.08	...
Philadelphia	...	8.96	7.93	7.92
Rochester	10.00	10.00	8.70	8.70
Washington	...	9.30	8.40	...
**Chicago	8.47	7.96	7.96	7.96
***Cleveland	...	9.06	...	8.55
***Detroit	...	8.96	8.45	7.93
**Des Moines	...	8.77	8.26	8.26
Milwaukee	8.88	8.83	8.38	8.33
Minneapolis	8.80	8.80	8.30	8.30
Omaha	...	8.60	8.10	8.10
**St. Louis	8.98	8.34	8.06	8.06
St. Paul	8.80	8.80	8.30	8.30
***New Orleans	...	9.50	7.72	7.72
Norfolk	...	9.00	7.80	...
Richmond	...	9.30	8.00	...
**Denver	...	9.18	7.65	...
Portland, Ore.	...	8.05	7.05	...
***Seattle	...	8.55	7.52	...

*Price includes 1% sales tax.
**Price includes 2% sales tax.
***Price includes 3% sales tax.

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Harry V. LeBourveau, plant manager for Shell Oil Co., Inc., at Sewaren, N. J., died July 8, at age 53, at the home of his sister on Staten Island. He had been ill for several months.

Readers' Forum

SELTZER & COMPANY
Boston

Editor:

I am writing with reference to the article, "Oilheating Crossroads," in your June issue.

During the recent exposition I have talked, as you have, to many executives in the fuel oil industry. I find there is considerable confusion in their thinking regards to the availability of oil. The less informed among them have no worries, but amongst the better informed of them there is still a considerable division of opinion as to the oil industry being ready to take on expanding commitments.

Your article states the substantial facts of the situation. I have no brilliant solution to suggest. The following comments may simply be a re-stating or re-arrangement of your data.

It seems to me that the oil refiners have to be sold on the fact that fuel oil is a major product, and if necessary must be marketed at the higher price so that adequate and ample supplies are available to the public. I do not think there is any quarrel from them on this point. I believe their objection is that the increase in price will meet with buying resistance from John Q. Public, and therefore will not work out.

Our argument to them must prove that the public in consideration of the automatic comforts of oil heat are willing to pay the higher cost for fuel oil. Now is the time for the oil heat industry to revise its own thinking, and put its own house in order. I mean that we must stop selling an oil burner as has been the case in the past with little or no thought of the efficiency of the application of oil fuel to its particular installation. In other words we must train our sales and service organizations to sell and install a completely engineered job, replacing the inefficient boiler if necessary with one that will be efficient with oil or making the necessary changes such as baffling and etc., to make the original equipment more efficient. We must also include in such cases any improvement in the general heating of the building such as proper insulation of the building, of the boiler, vent valves, and many other heating saving devices.

In addition there should be a tremendous drive made by the oil heat industry to improve the efficiency and modernize the older installations in accordance with these suggestions. The emphasis must be on making every new or old oil heating job just as economical as possible.

You may be interested to know that I have been talking to several of my best competitors in the heavy oil burner business about organizing a cooperative service and installation company. This organization would be owned by all of us, and would pool all our service and installation employees. Properly handled it could result in lower cost of installation and service for all of us, and better service to the public. It is only an idea as yet and there is much resistance to it, but maybe it can be put across.

MAX SELTZER.

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Predicts Atomic Fuel Competition Within 50 Yrs.

ATOMIC ENERGY WILL BE a serious fuel competition within 50 years, according to Dr. E. R. Gilliland of the Massachusetts Institute of Technology, testifying at the Federal Power Commission's natural gas inquiry. Dr. Gilliland was active in research that developed the atomic bomb. He predicts that atomic power units suitable for propulsion of naval vessels will be available in less than ten years, and the step from these units to large industrial power plants will be relatively simple from an engineering point of view. The timing is largely a matter of relative costs of atomic energy as compared to conventional fuels, he believes.

Dr. Gilliland said that within 50 years atomic power plants would be able to supply the entire fuel requirements at low cost for many communities in the country. "To the list of older, conventional fuels there has been added atomic energy with potentials which dwarf the resources of present fuels," he said. "While new sources of power may not completely displace older fuels such as wood, coal, oil and natural gas, it is certain to reduce man's dependence on them."

An experimental atomic power plant is now under construction at Oak Ridge, Tenn., and is scheduled for completion about January 1. It will be operated by the Monsanto Chemical Company.

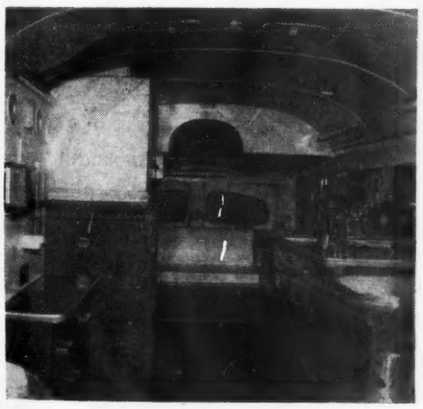
Manufacturers Activities

Delco Trainer on Tour

THE DELCO-HEAT SERVICE TRAINER, a mobile "School on Wheels," visited 89 localities in New York, Pennsylvania, Ohio and 12 Midwestern states between January 15 and June 30 this year, it is announced by K. O. Wolcott, service manager of Delco Appliance Division, General Motors Corporation.

Attending these instructional meetings in the Delco Appliance rolling workshop-laboratory were 638 Delco-Heat dealers and service men representing 425 dealerships.

Primary purpose of each training session was to demonstrate the operation, repair and testing of Delco-Heat automatic home heating equipment. The large Service Trainer is completely equipped with Delco-Heat models for testing motors, pumps, valves and controls. It is also set up to demonstrate Delco-Heat motors and controls in imitation of actual operating cycles, permitting study of adjustments to be made in the field.



Interior *of Delco trainer*

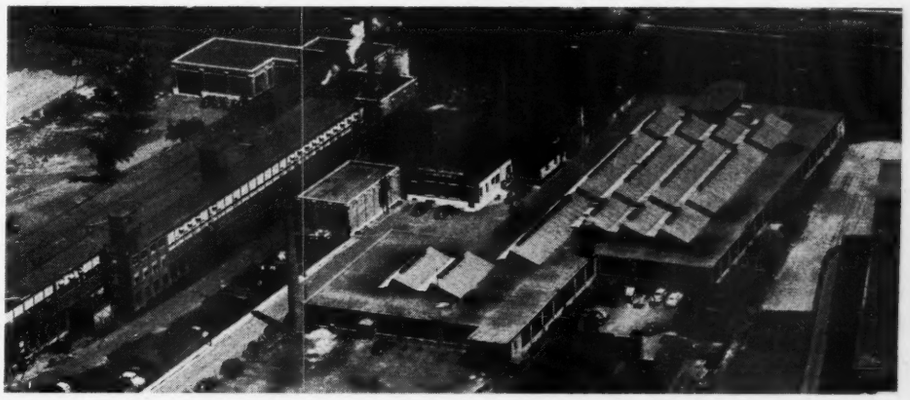
Delco personnel at the meetings were field service engineers for each territory, including G. C. Eggleston, Dayton, Ohio; A. E. Rettenmier, Omaha, Neb.; D. C. Hildebrecht, Cleveland, and H. G. Spindler, Jr., Rochester, N. Y.

Cities Service Dealer Panel

CITIES SERVICE OIL COMPANY (Pa.) has created a new advisory council consisting of 12 representative dealers and distributors. Periodically these men, chosen for their outstanding ability and acquaintance with regional conditions, will meet for discussion with Cities Service executives responsible for developing policy, products, merchandising and advertising programs. Through this means dealers and distributors will have opportunity to advise in overall planning, as well as to seek assistance in handling problems in the field.

Silent Glow Doubles Space

ROSS SHERMAN, president of the Silent Glow Oil Burner Corporation, estimates that the recent purchase of a former war plant from the War Assets Administration will lead to the employment of approximately three hundred skilled workers in the near future and will enable the company to keep pace with the increasing demand for Silent Glow Burners.



Silent Glow's *new plant at Hartford, Conn.*

The newly acquired building, located on Windsor Street in Hartford, Conn., comprises fifty-four thousand square feet of floor space, which together with the present Park Street plant, makes available over one hundred thousand square feet of floor space for production.

Built four years ago, the plant was used during the war by the Pratt and Whitney Division of United Aircraft for production of the world famous "Wasp" aircraft engine. All on one floor, the plant is exceptionally well adapted to assembly line production methods. Present plans call for use of the new building in the manufacture of power burners and additional types of heating equipment which will round out the Silent Glow line.

Major Revamps Distribution

MAJOR APPLIANCES, INC., with offices at Miami, Jacksonville and Tampa, Fla., have announced plans for three new and modern showrooms in those cities. The company is Florida distributor for a number of household appliances, including Allen oilfired space heaters.

Combustion Utilities Lens Tests Chemical Additives

WITH LITTLE EFFORT, servicemen can determine the effectiveness of any fueloil additive, according to Combustion Utilities Corp., New York. These additives are commonly known as conditioners, sludge removers, solvents, etc., and are used as treatments for heavy ends and less volatile fueloils.

It is difficult to detect the changes to the oil in a tank after the chemicals are applied, according to the company, but if the additive has merit the changes will show up in the firebox, where the treated oil will burn cleaner.

The Company has made available at small cost a special lens to use in studying the flame, and recommends that before applying the chemical additive the flame be studied for presence of black streaks, ragged ends, uneven or torch-type flame and smoky tips. Then 24 hours after the additive has been applied, inspection should reveal a bright, hot fire, a soft lazy flame with clean tips, elimination of black streaks and ragged ends. It should also be possible to cut down the air supply, according to demonstrators for the Company.

Oil-O-Matic Plan Aims at Quarter of Industry's Sales

TWO SALES AND PRODUCTION GOALS, one for the immediate future and one for the next three years, have been set for the Oil-O-Matic field and factory sales force by W. A. Matheson, Vice-President of the Eureka Williams Corporation and Manager of the Williams Oil-O-Matic

Oil-O-Matic *sales staff at Lake Wawassee, Ind.*

Division, at a three-day conference July 1-3 at Lake Wawasee, Ind.

The objectives set by Mr. Matheson are: (1) 800 new Oil-O-Matic dealers by July, 1947, without diverting current production from already established dealers; (2) 25% of all oilheating sales by 1950.

Steps toward these goals were detailed by Mr. Matheson; E. H. Davison, manager of heating sales, who was conference chairman; M. V. Stagg, assistant to the manager of the Oil-O-Matic Division, and T. H. Green, special factory sales representative.

Also present for the sales conference were Henry W. Burritt, President of the Eureka Williams Corporation; George T. Stevens, Vice-President of Eureka Williams Corporation and Manager of the Eureka Division; O. E. Nesmith, Director of Engineering, Eureka Williams Corporation; and D. W. Boylan, company Comptroller.

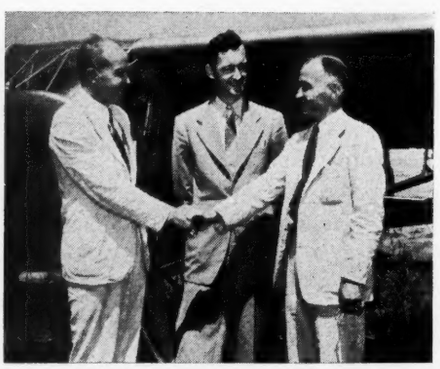
"One conclusion is obvious and inescapable," Mr. Matheson pointed out. "The current industry practice—aimed at trading present production for signed franchises—is out! Boiled down, what I have just said means that expansion of the next 12 months will be entirely independent of product sales."

Mr. Stagg hammered home the story of postwar production: "From August 1945 through May 1946, we produced 5% more oilburners than had been previously produced by our factory in any full year, including the peak pre-war year. In fact, eight months' production, October 1945 through May 1946, exceeded our largest single pre-war year production. Again . . . the average monthly production over the five months' period, January through May 1946, represents 317% of the average monthly production of the fifteen year period from 1927 through 1941."

He reported that 1946 shipments to date exceed shipments for the same 1941 period by 218%. Then he pointed out that industry statistics show that only 53% of all oilheating dealers had any salesmen at all at the close of 1945 and only 34% had them all year. "Apparently 1/3 the number of salesmen are doing 3 times the volume of business handled in the last pre-war year. We are squarely in the middle of an out-of-this-world condition in which each man is making—on an average—*nine times* the sales per man in 1941."

Sid Harvey Buys Plane

THE JIFFY BIRD, a newly purchased two-seated Taylorcraft airplane recently has been purchased by Sid Harvey, Inc., Valley Stream, N. Y., to enable executives of the parts repair and supply firm to visit offices of the Philadelphia, Newark and Boston associated companies. Sid Harvey, president, has been granted his pilot's license.



Sid Harvey *(right) is congratulated by Lawrence Harvey and Joseph R. Zieminski, vice-presidents, on getting his pilot's license.*

The fully equipped plane has a top speed of 105 miles per hour. The name is a combination of the names of two company products, "Jiffy Juice" and "Oily Bird."

Gulf in Television

GULF OIL CORPORATION expanded its air activities to include television beginning Thursday, June 20, when it became the first sponsor of a news period over CBS Television Station WCBW—N.Y.

The Gulf-CBS tele-newscasts are presented each Thursday from 8:15 to 8:30 p.m., with headline news events being reviewed both orally and pictorially. It is planned to exploit television's potency as a visual medium by using special newsreel films, up-to-the-minute news photo "stills" and animated maps and charts. A running commentary will translate and interpret the importance of the events viewed.

U. S. Earnings Up

UNITED STATES RADIATOR CORP., Detroit, net sales for the five months ending June 30, 1946, totaled $5,496,899 with a net profit of $262,844, after estimated taxes of $160,700, compared to sales of $4,668,400 and a net profit of $93,322 during the same period in 1945.

Wesley J. Peoples, chairman, pointed out that the earnings during the five-month 1946 period of $458,210, available for bond interest before income taxes, show the 5% debenture interest earned thirteen times over.

Two-Day Service Sessions Held for Delco Outlets

COMPREHENSIVE service instruction was received by Delco-Heat distributors and dealers of the Western Region in a series of two and three day meetings held recently by the Service Department of Delco Appliance Division, General Motors Corporation, it was announced by K. O. Wolcott, service manager. Fifteen distributors and 150 dealers of Delco-Heat automatic home heating equipment were represented by 335 men at these meetings held during May and June in Billings, Mont.; Spokane, and Seattle, Wash.; Portland, Ore.; Sacramento, Calif.; Salt Lake City, Utah and Denver, Colo.

(*Continued on page 66*)

TESTED...PROVEN QUALITY PRODUCTS

OIL BURNER!

WEBSTER ELECTRIC IGNITION TRANSFORMERS
Date Back to the Spark Coil Days

It's the "old timers," like the Webster Electric Company who have grown with the industry and helped work out the many problems, who have gained the know-how and produce transformers that meet the industry's exacting requirements.

Webster Electric Ignition Transformers, as a result, prove the soundness of their construction by giving trouble-free performance and long-lived service. They are constructed of well balanced design and carefully manufactured to meet the rigid, high quality standard set by Webster Electric.

Features that have met with high favor are as follows:

1. **Easy interchangeability.**
2. **Three sizes offer wide adaptability.**
3. **Extra-sized junction boxes provide easy connections.**
4. **Separate mounting plates for replacement.**
5. **Best quality insulation used throughout.**

To insure the best in ignition transformers, it will pay to specify Webster Electric.

FACTORY-TRAINED FIELD SERVICE AT KEY POINTS

No dealer is very far away from Webster Electric factory-trained and equipped service. Webster Electric Authorized Service Stations are located at many key points for servicing pump elements that are best handled by experts. This unique Webster Electric field service is available to every oil burner dealer. Write for a list of these stations.

WEBSTER ELECTRIC
RACINE Established 1909 WISCONSIN

Export Dept.: 13 E. 40th Street, New York (16), N. Y. Cable Address: "ARLAB" New York City

"Where Quality is a Responsibility and Fair Dealing an Obligation"

Manufacturers Activities

(*Continued from page 62*)

Distributors and dealers heard discussions by factory service personnel on the combustion of fueloil, calculation of fuel rates, heat loss and heating surveys. The functions of basic types of oilburners were also discussed, and performance of such functions by Delco were stressed. Capacities and applications of Delco-Heat products, the installation of Delco-Heat controls, chimneys and draft conditions and the correct installation of the proper type combustion chambers were reviewed.

A presentation was made on "Service Procedure" including preventive maintenance, service and repair of Delco-Heat equipment, and special tools and test fixtures for use in performing such work.

R. T. Reddington, factory service manager, conducted the meetings with the assistance of Roy Case, Delco-Heat western coast sales representative.

Hipple Takes Airtemp

LOWELL B. HIPPLE CO., Camden, N. J., has been named Chrysler Airtemp distributor in Camden City and County and Burlington and Gloster Counties, by S. S. Frets, Jr., Inc., Philadelphia, distributor in Eastern Pennsylvania and Southern New Jersey. Lowell B. Hipple, an old-timer in the oilheating business with twenty years' experience, is vice-president and Frank Mitchel is president. P. B. Concelman is secretary and treasurer. The company will distribute a complete line of heating and airconditioning equipment and service, and operate an automatic fueloil delivery service.

SERIES 89

LOW WATER CUT-OFFS FOR GAUGE GLASS INSTALLATION

Furnished complete with improved connectors and all fittings necessary to attach to boiler. No threading necessary. Provided with ¼" tapping for pressure switch. Maximum steam pressure 25 lbs.

WATTS

A NAME TO REMEMBER

WATTS REGULATOR CO.

Lawrence, Massachusetts

Automatic · TEMPERATURE and PRESSURE REGULATING SAFETY DEVICES · PROTECT-CONTROL

Coastal Absorbs Home

COASTAL OIL COMPANY has acquired by merger all the assets and liabilities of Home Fuel Oil Company, according to Louis E. Marron, President. Home, formerly one of the largest retail fueloil distributors in the Northern New Jersey area, disposed of its retail business three years ago to five "Home" companies in East Orange, Englewood, Hudson, Passaic and Ridgewood. These companies will continue to operate at retail, and the wholesale oil business of both Coastal and Home will be operated by the former management.

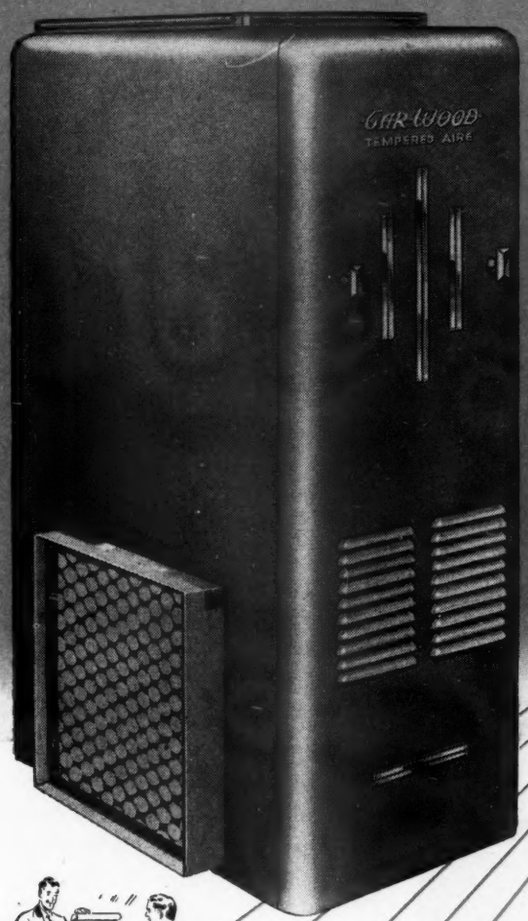
Burnham Revives Outing

BURNHAM BOILER CORP., Irvington, N. Y., held its 15th Annual Golf Tournament this year after a lapse due to the pressure of war work in recent years. The affair at Briar Hills Country Club, Briarcliff Manor, N. Y., was attended by more than 60 employees and representatives.

Winners with a low gross of 82 were A. G. Kalmes and A. J. Hall, followed by James Hudson with an 84; E. Van Sise and John Taylor with 89s, and Horace Durston with a 90. Others with gross scores under the century mark were A. W. Klein, 95; V. A. Good, 97; W. H. Hofmann, R. Lund and R. B. Ohl, 98; and J. Ramsey, F. W. Kuss, F. L. Backus and M. C. Cummings, 99.

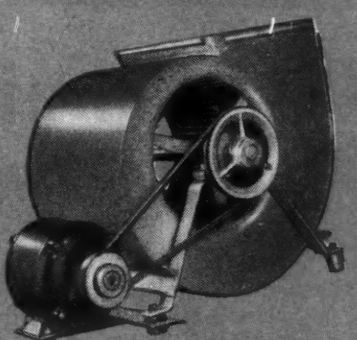
Hago Moves

HAGO PRODUCTS, INC., manufacturers of nozzles for oilburners, has moved to a new location at 1281 Springfield Ave., Newark 11, N. J., according to an announcement by Herman Harsch, a proprietor.



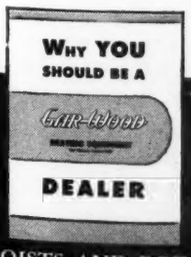
These OUTSTANDING FEATURES make GAR-WOOD TEMPERED-AIRE *Easier to Sell!*

1. **THE NEW completely automatic Tempered-Aire is an integrally built furnace burner unit that is backed by 20 years of research.**
2. **THE ECONOMIZER, located below the firebox, contains many narrow tubes to provide greater heating surface and more intimate contact of hot gases and air. Cold air from the blower is forced between these tubes at high velocity before reaching the hotter firebox.**
3. **THE BURNER and firebowl combustion chamber are integrally built. The unit has completely demonstrated the soundness and value of its design features to produce a clean fire with a minimum of excess air.**
4. **THE POWER UNIT maintains a definite controlled pressure that assures the proper mixture of oil and air to produce a uniform flame regardless of draft variation. All parts are die-formed and welded into a single rigid unit. The power unit is rubber mounted for silent operation.**
5. **NEAT, COMPACT, beautifully styled Tempered-Aire is designed to meet the heating requirements of every type and size home.**



SILENT, EFFICIENT AIR BLOWER

Designed to deliver a generous quantity of air against the friction of duct systems found in actual practice with the motor drawing a minimum of wattage. The shaft is mounted on self-aligning bearings set in rubber pillow blocks, and the discharge outlet is connected with canvas.

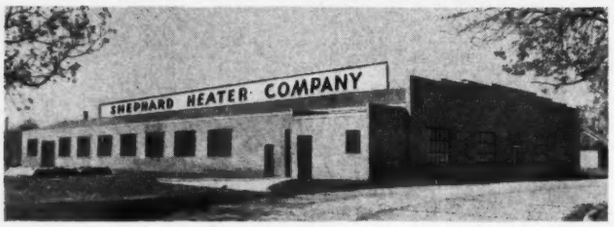


Write Today for This Free Booklet

GAR WOOD INDUSTRIES, INC.
HEATING DIVISION • DETROIT 11, MICHIGAN
Canadian Distributors: Engineering Industries, Ltd.
114 Laird Drive North, Leaside, Toronto 12, Ontario

HOISTS AND BODIES • WINCHES AND CRANES • TANKS • ROAD MACHINERY • MOTOR BOATS

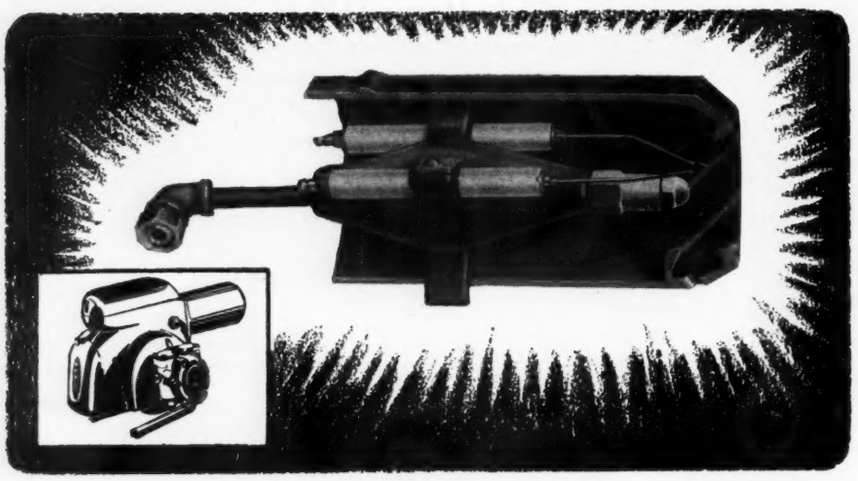
fueloil & oil heat



Shephard Heater *Company's new and larger factory at Terre Haute, Indiana.*

Shephard Heater Moves

SHEPHARD HEATER CO., formerly located on South Park Avenue, Chicago, has completed moving all equipment and stock to Terre Haute, Ind., and has started operations there in a modern plant designed for efficient, large volume production, according to an announcement by John M. Shephard, owner. The company produces "Percolator" type welded steel oilfired hot water heaters and boilers.



HERCO "Thrifti-fier"

Provides A Hotter Flame At LOWER Cost!

Inside the nozzle of every Herco Oil Burner you'll find an exclusive Herco feature—the Thrifti-fier. This device permits hot gases to travel slowly through the boiler so that the maximum amount of heat is delivered to all heating surfaces. Every drop of oil is converted into actual heat—making Hercos truly "oil thrifty." And it's the thrift that pleases customers. When you're selling an oil burner that provides a cleaner, hotter flame at a lower fuel cost, then you're handling a burner that's "easy to sell."

OHI **HERCO OIL BURNER CORPORATION - LANCASTER, PA.**

Western States Representative:
Harold Winningham & Company
Main Office:
1112 Second St., Seattle, Washington
Branches In:
San Francisco, Los Angeles, Salt Lake City, Denver and El Paso.

HERCO
The Oil-Thrifty
OIL BURNER

Iron Fireman In Large Space

TWO PAGE ADVERTISING in four colors has been started in the *Saturday Evening Post* by Iron Fireman Mfg. Co., Cleveland. Copy and illustrations features "Luminous Flame" heating for all types of plants either with coal or oil. The company features both its "Vortex" oilburner with a sunflower flame from a vertical pressure nozzle, and the M-2 model which is a high pressure oilburner of conventional design. The first color spread appeared in the June 1 issue of the *Post*.

Mason Gets McIlvaine

MASON MACHINE CO., York, Pa., has been granted an exclusive license to manufacture and sell McIlvaine "oil stokers" and replacement parts under patents owned by the McIlvaine Burner Corporation of Illinois, according to an announcement by John H. McIlvaine, president, who will not be actively engaged in the oilburner business.

George F. Sleeger is president of Mason Machine and S. Ralph Horn is secretary. Russell A. Duthie will be in charge of oilheating operations for the company.

M-H Office at Rochester

OPENING OF A NEW OFFICE in Rochester, N. Y., by the Minneapolis-Honeywell Regulator Company has been announced by Arnold Michelson, New York resident vice president.

Located in the Exchange Building, the new office will be under the supervision of Stanley H. Perkins and will be responsible for sales and service of heating, ventilating and air conditioning controls in Livingston, Monroe, Steuben, Wayne, Yates, Seneca, Ontario, Schuyler and Chemung counties. Tioga County in Pennsylvania also will become part of the company's Rochester district.

Others on the new office staff are Harold Greene, Gerald C. Britton and Orville Kelly.

Harvey of Pa. Expands

SID HARVEY, president of Sid Harvey, Inc., Valley Stream, N. Y., announces that Sid Harvey of Pa., Inc., has leased another store in Philadelphia. This new location is to serve the customers in the western part of Philadelphia with oilburner repair parts and rebuilding service.

(Continued on page 76)

TRIPLE-REFINED ...that's Atlantic furnace oil

How do you produce a furnace oil that gives a high degree of customer satisfaction?

We went about it this way: 1. We studied all types of burners in operation. 2. We made a very thorough study of all furnace oils. 3. We asked furnace oil users what could be done to improve this type of fuel. In other words, The Atlantic Refining Company pioneered in the application of research to the refining of furnace oil of excellent quality. That is the reason Atlantic Furnace Oil is a triple-refined product. It also explains why this oil gives satisfaction in your customers' burners.

There are twenty-one Atlantic barge and pipeline terminals serving the Atlantic seaboard.

ATLANTIC FURNACE OILS

THE ATLANTIC REFINING COMPANY

REFINERIES AT PHILADELPHIA, PENNSYLVANIA; AND ATRECO, TEXAS

Terminals at

Buffalo, N. Y.	New Haven, Conn.	Trenton, N. J.
Rochester, N. Y.	Newark, N. J.	Philadelphia, Pa.
Syracuse, N. Y.	Williamsport, Pa.	Wilmington, Del.
Albany, N. Y.	Northumberland, Pa.	Baltimore, Md.
Elmira, N. Y.	Mechanicsburg, Pa.	Richmond, Va.
Binghamton, N. Y.	Allentown, Pa.	Wilmington, N. C.
Providence, R. I.	Reading, Pa.	Brunswick, Ga.

Live oil heat

Manufacturers Activities

(*Continued from page 68*)

The new store will be located at 1520 South 57th Street, West Philadelphia. Alterations are in progress and it is expected that the store will be ready for occupancy about the first of September.

The company will retain the present location at 521 West Lindley Avenue, Philadelphia, as a Branch—but the office and bookkeeping department will be established at the West Philadelphia address, when completed.

Standard Plans Pipeline

A PIPE LINE to carry finished petroleum products to Minneapolis and to Moorhead, Minn., across the Red River from Fargo, N. D., is being designed by the Standard Oil Company (Indiana). Authority to construct certain buildings connected with the line was granted by the Chicago office of the Civilian Production Administration.

The line will be 662 miles long, and will carry petroleum products from the company's refinery at Whiting, Ind. In addition to Minneapolis and Moorhead, other terminals will be established at intermediate points not yet chosen.

Coleman Sells Suppliers

THE COLEMAN COMPANY, INC., Wichita, Kan., manufacturer of home heating equipment and gasoline pressure appliances, is telling the story of its peacetime production and distribution programs at a series of luncheon meetings for its principal suppliers of raw materials and finished products.

The first meeting was July 15 at Chicago. Other meetings: July 17, Cleveland, Ohio; July 19, Middletown, Ohio; July 22, Pittsburgh, Pa.; July 24, St. Louis, Mo. and July 26, Kansas City, Mo.

Traveling with a 11,000-pound display of more than 60 Coleman products, the meetings are arranged and presented by Ralph W. Carney, Coleman vice president and sales manager, Harold Fryar, purchasing director and P. W. DeGood, sales engineer.

Guests will include both sales and production executives of the company's principal suppliers.

Gar Wood Expands

GAR WOOD INDUSTRIES, INC., has expanded its manufacturing facilities by purchasing from the War Assets Administration the former Bendix plant at Wayne, Mich., it was announced by John J. Bergen, chairman, and Charles W. Perelle, president.

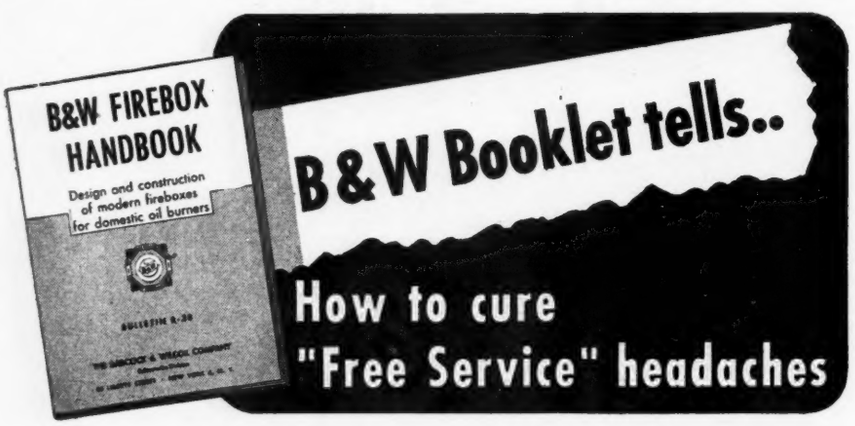
The company will transfer all its Detroit operations to the new site with the exception of its body plant which will remain on Connecticut Avenue. When the new plant is in full operation, it is expected that Gar Wood employment in the Detroit area will rise to 3,500 from the present total of 1,500.

The plant, which is of modern steel, brick and glass construction, contains 236,500 square feet of factory space and 35,000 feet of office space, and is located on a plot of thirty-seven acres on the outskirts of Wayne within 45 minutes of downtown Detroit.

Duo-Therm Adds Plant

GREATLY EXPANDED FACILITIES for manufacture of fueloil space heaters, furnaces and water heaters have been gained by

(*Continued on page 80*)


B&W FIREBOX HANDBOOK
Design and construction of modern fireboxes for domestic oil burners
B&W Booklet tells..
How to cure "Free Service" headaches

Another call for "free service" on one of your firebox installations during the guarantee period—more valuable time lost. Up go costs and down go your profits on *that* job!

Inefficient, poorly designed firebox installations result in high fuel bills, dirty fires, insufficient heat on cold mornings, flame noise, rapid firebox deterioration. All of these troubles lead to customer dissatisfaction—and another hurry call for free service.

To help you eliminate this free-to-the-customer but costly-to-you maintenance work, Babcock & Wilcox have published an informative booklet packed with practical information on domestic oil burner fireboxes. This thorough study of firebox design and construction, complete with many tables and drawings, helps you get rid of "free service" headaches by explaining how to design better fireboxes.

Already more than 5000 readers are profiting from the wealth of information in the B&W Firebox Handbook. Write today for your free copy.

R-254

Water-Tube Boilers, for Stationary Power Plants, for Marine Service . . . Water-Cooled Furnaces . . . Superheaters . . . Economizers . . . Air Heaters . . . Pulverized-Coal Equipment . . . Chain-Grate Stokers . . . Oil, Gas and Multifuel Burners . . . Seamless and Welded Tubes and Pipe . . . Refractories . . . Process Equipment.

BABCOCK & WILCOX
THE BABCOCK & WILCOX CO.
REFRACTORIES DIVISION
GENERAL OFFICES: 85 LIBERTY ST., NEW YORK 6, N.Y.
WORKS: AUGUSTA, GA.

F-24

You Build Your Business on the Sound Basic Principle of "Climate Control" . . . .

. . when you're a Mueller Climatrol "Comfort Merchant"

"Climate Control" means, basically, conditioning and handling of *air*. That's what you are selling, when you concentrate on the Mueller Climatrol line — with the assurance of delivering true indoor comfort and winning the good will of satisfied customers.

When your customer *starts right* with Climatrol, he is not only getting a modern system, but he is also in a position to take advantage of future air conditioning developments which can be added to the original Climatrol installation.

While it stands for the latest in home comfort, the Mueller Climatrol name also stands for one of the oldest performance records in the industry — 89 years of specialization in home heating. It is an old, dependable name, a well-known name — constantly promoted to your best prospects through color advertising in American Home, Better Homes and Gardens, and other magazines.

The Climatrol line is complete, enabling you to sell the right equipment for the job. Each Climatrol unit is specifically designed for efficiency with oil fuel. Tie up with Mueller, for the long pull. Be a Climatrol comfort merchant — it pays!

Write for bulletins.

L. J. MUELLER FURNACE CO., 2009 W. Oklahoma Ave., Milwaukee 7, Wisconsin

MUELLER Climatrol

Reg. U. S. Pat. Off.

fuel oil & oil heat

Manufacturers Activities

(*Continued from page 76*)

Duo-Therm Division, Motor Wheel Corp., Lansing, Mich., in the purchase of a spacious, completely modern Lansing plant from the U. S. Defense Plant Corporation.

Covering more than 25 acres of land, and offering more than a half million square feet of usable floor space, the plant is equipped for a modern manufacturing operation.

It is thought the plant may be ready for manufacturing operations after the first of the year, according to M. F. Cotes, vice-president.

Nat. Rad. Gets Safety Award

THREE PLANTS of the National Radiator Company have been awarded the United States Department of Labor's Certificate of Safety Achievement for reducing accidents 40% or more in the last six months of 1945. They are the Equipment and National plants at Johnstown, and the Lebanon, Pa., plant. The Equipment and Lebanon plants reduced accidents for the period 100% over the same six months in 1944, while the National plant reduced its accident rate 63%. This is the second time that the National and Lebanon plants have won this award.

CS Starts New Plant

PLANS FOR an $18,000,000 expansion of the East Chicago refinery of Cities Service Oil Company (Del.) have been announced by W. Alton Jones, president of Cities Service Company, the parent corporation.

The new facilities, which will include the latest type of fluid catalytic cracking unit, will increase the capacity of the East Chicago refinery to 35,000 barrels a day. The entire job, from design to construction, will be under the supervision of the M. W. Kellogg Company, and is scheduled for completion in the spring of 1948.

The new facilities and increased capacity at East Chicago, Mr. Jones pointed out, will enable Cities Service to supply its marketing outlets in 36 states with petroleum products from centrally located refineries.

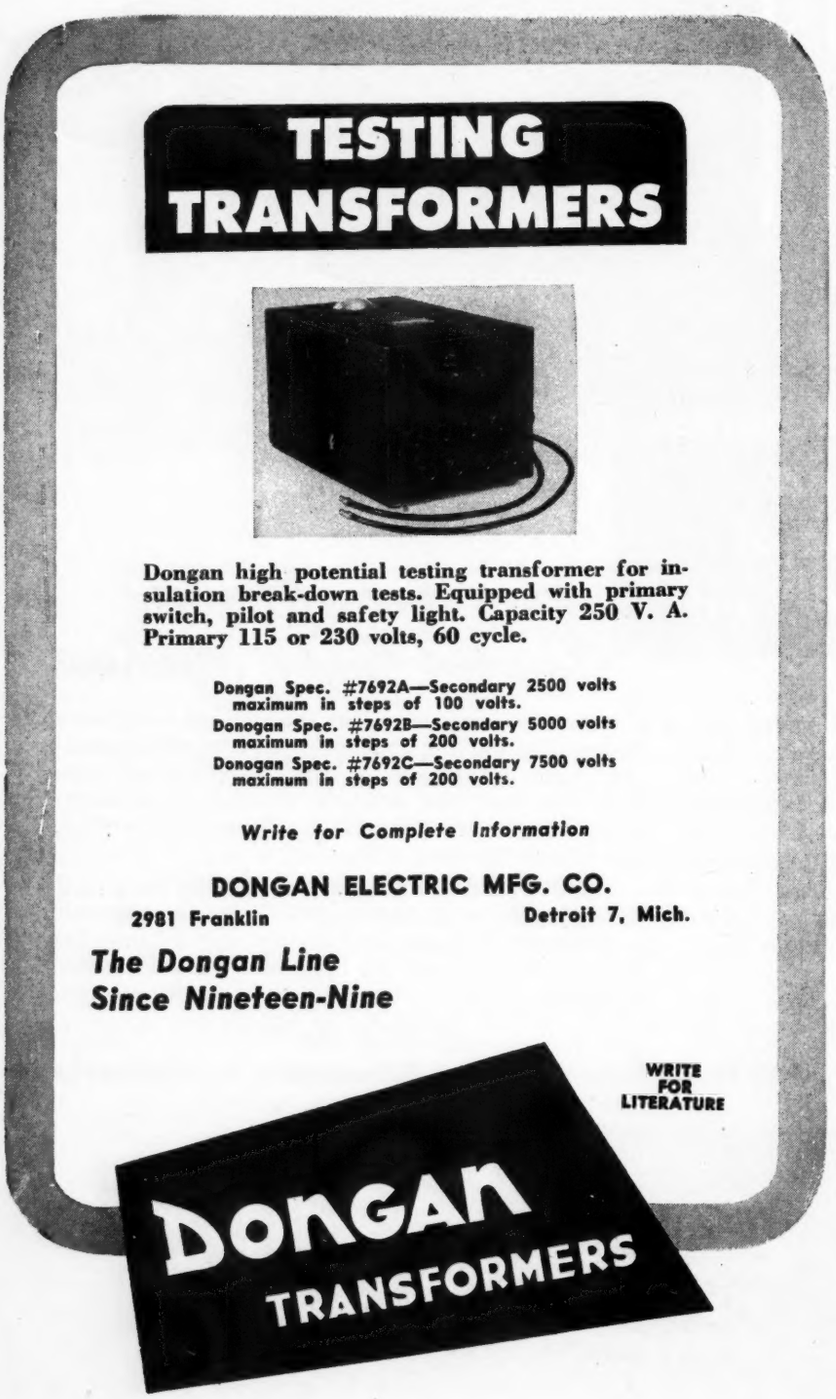
Lodge & Shipley Gets Risselt

LODGE & SHIPLEY Machine Tool Co., Cincinnati 4, has obtained exclusive license to manufacture and sell products formerly produced by the Risselt Mfg. Co. also of Cincinnati. These products include air eliminator valves, vacuumatic valves and twin stimulators of special patented construction for steam and vacuum heating systems.

The "Risselt" valves are corrosion proof, can easily be taken apart, cleaned and reassembled without removing valves from the radiator. Annual cleaning is recommended.

Sinclair Runs Schools

SINCLAIR REFINING COMPANY is conducting a series of three-day schools this summer for its heating oil sales personnel, covering fueloils and their application to modern oilburners, at its East Chicago Burner Laboratory. The sessions have been organized by Fred V. Anderson, Fuel Oil Manager, and A. Golnik, Combustion Engineer, and include a study of the latest developments in electric controls and a visit to the Underwriters Laboratory in Chicago.


TESTING
TRANSFORMERS
Dongan high potential testing transformer for insulation break-down tests. Equipped with primary switch, pilot and safety light. Capacity 250 V. A. Primary 115 or 230 volts, 60 cycle.
Dongan Spec. #7692A—Secondary 2500 volts maximum in steps of 100 volts.
Donogan Spec. #7692B—Secondary 5000 volts maximum in steps of 200 volts.
Donogan Spec. #7692C—Secondary 7500 volts maximum in steps of 200 volts.
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DONGAN ELECTRIC MFG. CO.
2981 Franklin
Detroit 7, Mich.
The Dongan Line
Since Nineteen-Nine
WRITE FOR LITERATURE
DONGAN
TRANSFORMERS

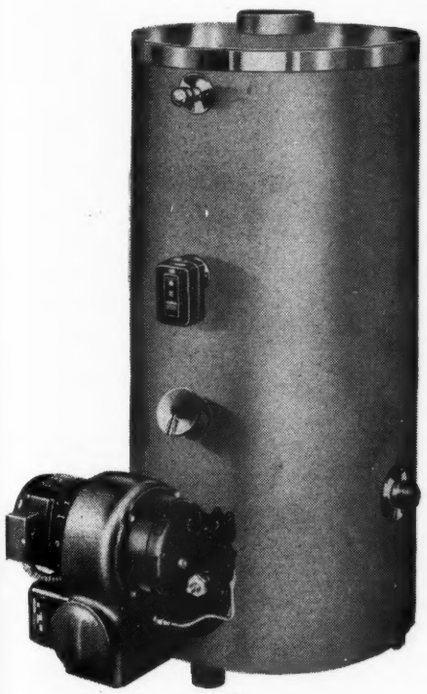
THEY'RE BUILDING BUSINESS FOR YOU IF YOU SELL . . .

ABC Oil Burner

OIL BURNERS AND WATER HEATERS

Next year will see the biggest building boom in history. And every home that goes up will be your prospect . . . a good prospect . . . if you are an ABC dealer. There's an ABC oil burner and water heater to fit the smallest or largest home. For a quarter of a century ABC oil heating equipment has been famous for its efficiency and dependability. You will sell more and profit more with ABC.

WRITE FOR COMPLETE DETAILS ON DISTRIBUTORSHIPS FOR 1947



ABC MATCHED WATER HEATER UNITS . . . Every sturdy, well built, attractive water heater is matched with the correct . . . specially designed ABC Oil Burner. A profit making sales advantage!

ABC PRESSURE BURNERS . . . The exclusive ABC Governoil Nozzle, along with the other famous ABC features, make these pressure burners efficient for any size home. They're economical and mighty profitable too.

AUTOMATIC BURNER CORPORATION

1823 CARROLL AVENUE, CHICAGO 12, ILLINOIS

fueloil & oil heat

Industry Groups

Activities of local and national industry associations are reported monthly in this department. Secretaries are invited to send reports of their groups' activities, to reach the editor by the 20th.

OHI Directors Authorize 1947 Oilburner Show

DIRECTORS OF OIL HEAT Institute of America, at their regular quarterly meeting in New York, July 9, authorized the staff to initiate action for an oilheating exposition at Chicago in the spring of 1947. If accommodations cannot be found in Chicago, an attempt will be made to find facilities in Boston. Discussion at the meeting developed the feeling that only these two cities were eligible for a national show at this time, though a bid from Milwaukee was considered, and other cities were mentioned in the discussion.

Some doubt was expressed about the advisability of holding a show within four or five months of the Heating and Ventilating Exposition in Cleveland late in January. It was thought that the oilheating exposition should be in the Middle West, since the 1946 show was held at Philadelphia, but Boston was chosen as the alternate city if accommodations cannot be found in Chicago. The board also asked that regional shows be withheld in areas where national shows are scheduled.

Directors also heard a report on the first meeting of the Joint Oilheating Committee on Veterans' Housing, reported in the July issue, and were presented with the 1946 Year Book which had just been issued. This book, the first of its kind to be issued by OHI, contains a complete list of all members, committees, directors, and the text of the constitution and by-laws of the organization. It has been distributed to all members.

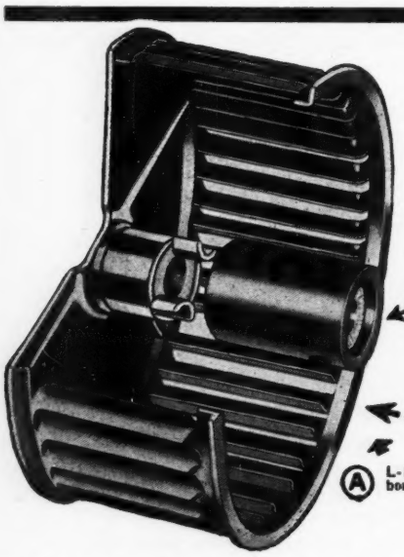
The constitution was amended at a special meeting of the membership to provide for more than one vice-president, and resignations of two directors were accepted with regret. J. H. Van Sciver, president of Bethlehem Foundry & Machine Co., resigned due to ill health, and Clarence Dieter, also of Bethlehem, was elected to the board to fill the vacancy.

Alexis Doster, formerly with Torrington Mfg. Co., resigned from the board due to severing his connection with the industry, and Clark Hastings, vice-president of Rochester Mfg. Co., was elected to fill the vacancy.

G. T. Kaufman, technical secretary, reporting for the Engineering Committee, said a contract had been let to the Lombard Governor Corp., Ashland, Mass., to build the first combustion reference test unit. The committee also has been asked by the Joint Committee on Veterans' Housing to consider the equipment the oilheating industry will need to supply the small home demand. It is felt that high pressure burners firing a gallon an hour or more will be of too great capacity to fire the new housing efficiently. Vaporizing equipment is well within the capacity range, but there is lack of agreement between the vaporizing burner manufacturers and the oil companies on the fuel that will be satisfactory.

The directors' meeting was conducted by S. H. Shipley, vice-president, in the absence of President W. A. Matheson, and C. F. Curtin was secretary of the meeting. Managing Director A. E. Hess reported that more than 30,000 booklets

(*Continued on page 88*)



LOVEJOY likes the tough ones!

A L-R Body inserted (not bonded) in rubber body.

B Lovejoy Socket actually molded in the rubber. (No metal engages blower hub)

LOVEJOY TYPE CX Double-flex Oil Burner Couplings Can't Fall Off During Servicing

- ► No metal to metal contact.
- ► Quickly assembled in dark or close quarters.
- ► No looseness, no rattle.
- ► Low cost.

A Difficult Problem Solved By *NEW LOVEJOY FLEXIBLE COUPLINGS*

New, one unit construction means quick assembly, a tight fit, noiselessness and extreme flexibility. Coupling can't fall off because it can be permanently fastened either to blower hub or to motor shaft. Six sizes from 2¼" to 5" long.

GET THE FACTS. WRITE FOR BULLETIN #520

LOVEJOY Flexible Couplings

OHI

LOVEJOY FLEXIBLE COUPLING CO.

5012 W. Lake Street • Chicago 44, Ill.

Toridheet
ROTARY BURNER

Built its national reputation for outstanding efficiency and spectacular economy on performance

You can't win the reputation that Toridheet Rotary Burner has earned by anything except *performance.* And the performance must be regular and consistent, not occasional. This fact was grasped by the manufacturers of Toridheet Rotary at the beginning of its career. Constant research and continuous improvement and refinement keep Toridheet in the lead. What this means to the *user* in perfection of service is vital. What it means to the *installer* is expressed in the ever growing national reputation Toridheet has earned among dealers for low maintenance cost.

TORIDHEET DIVISION

CLEVELAND STEEL PRODUCTS CORPORATION, CLEVELAND 2, OHIO

Affiliated Canadian Manufacturers: Conroy Manufacturing Company, Ltd., Catharine St., St. Catharines, Ont.

OIL BURNERS • OIL BURNER BOILERS • OIL WATER HEATERS
AIR CONDITIONING UNITS • COAL AND GAS FURNACES

Industry Groups

(*Continued from page 84*)

"More People Burn Oil" have been printed and are being distributed, and that sales of the Basic Service Text are proceeding at a steady rate.

The next meeting of the Board will be at Chicago on October 8.

New Eng. OHI on Radio

THE YANKEE NETWORK on July 11 broadcast a half hour program covering the Oil Heat Institute of New England's Annual Exposition which was held recently in Boston. On the broadcast were officers of the group, as well as guest speakers. The stations handling the broadcast were located in Boston, Bridgeport, Fall River, Fitchburg, Greenfield, Hartford, Holyoke, Laconia, New London, Lowell-Lawrence, Pittsfield, Providence, Rutland, Worcester, Manchester, Waterbury and Concord.

St. Louis OHI Has Outing

THE OLD TIME OIL MEN'S Outing of the Oil-Heat Institute of St. Louis was held July 23 at the Westborough Country Club, attended by more than 60 industry members. Golf, swimming and other sports were followed by a dinner, at which C. P. Wilson of Socony-Vacuum acted as toastmaster, and an evening "bull" session. Leo Brown is president of the chapter, George Fliehman, vice-president, George Koertel, secretary, and Lou Sullivan of Shell was chairman of the outing committee.

ICHAM Develops Specs. For Pot-Burner Fuel

NEW SPECIFICATIONS for a burning oil for pot-burner equipment have been announced by the Institute of Cooking and Heating Appliance Manufacturers, in a step to insure proper fueloil for the 2,500,000 present users of vaporizing burners, and the estimated 1,000,000 a year of new burners scheduled for production starting in 1947. In a unanimous action the industry approved revised fueloil standards adopted by the technical committee of ICHAM's Oil Division, and has forwarded them to oil refiners and technical groups.

The new standards revealed the willingness of the industry to cooperate with oil refiners in obtaining fueloil which will be acceptable to all manufacturers of oil-burning equipment. As a result, standards called for a "stable distillate suitable for vaporizing, pot-type burners," produced according to specifications developed through a long period of testing and experimentation with straight-run distillates and oils produced in the catalytic cracking process.

While the industry, through its technical committee, reaffirmed its belief that straight-run fuel oils are most suitable for its equipment, it was recognized that any fuel made by any process would be acceptable, providing it was treated or handled in a manner which would give the burning characteristics of the straight-run product.

Calling attention to the fact that the standards are the "official expression of the opinion of the industry on the type of fueloil required for vaporizing burner equipment," A. D. Olds, chairman of the technical committee also pointed out that the specifications include recommendations for both minimum and maximum kinematic viscosity of the fuel oil, thus

(*Continued on page 92*)

NOW...You Can Get Delivery on That Good RED COVER Hose!

GOODALL

"NEWTYPE CORD"

SYNPLASTIC FUEL OIL HOSE

Back again in its pre-war Red Cover . . . with the same kinkproof construction and non-swelling tube that cuts delivery costs *way down.* Quicker flow . . . less time for each stop . . . more stops per day. Despite its superior strength and durability, "Newtype Cord" is light in weight, extremely flexible, easy to handle. Sizes: 1″ to 2″.

Contact Our Nearest Branch for Details and Prices.

GOODALL RUBBER COMPANY · INCORPORATED

WE ARE PARTICIPANTS IN THE OWNERSHIP AND OPERATION OF NATIONAL SYNTHETIC RUBBER CORPORATION

THE GOODALL-WHITEHEAD COMPANIES

Philadelphia • Trenton • New York • Chicago • Pittsburgh • Boston
Los Angeles • San Francisco • Seattle • Salt Lake City • Houston

Factory—Trenton, N. J. Established 1870

WE'RE NAILING DOWN THE ROOF

...AND IN NO TIME THE NEW THATCHER PRODUCTION LINE WILL BE ROARING INTO ACTION.

We've been busy as beavers since last spring's fire. Now the job is all but finished. The production line's in position—we're putting on the roof—and soon the last brushful of paint will complete the finest furnace factory we've ever seen built anywhere.

It won't be long now. In a few weeks that new production line will be roaring. With the best fabricating equipment in existence, we'll be putting 96 years of heating know-how into the finest Thatcher furnaces ever.

For tomorrow's comfort for your customers of today, keep your eye on Thatcher.

THATCHER BOILERS ARE IN PRODUCTION NOW
THATCHER FURNACES WILL BE BACK SOON...

KEEP YOUR EYE ON THATCHER

Thatcher **FURNACE COMPANY**

GARWOOD, NEW JERSEY

SPECIALISTS IN HEATING SINCE 1850

fueloil & oil heat

Industry Groups

(*Continued from page 88*)

making possible efficient control of the rate of flow of fuel in the vaporizing burner equipment.

In approving a 2.3 minimum and 2.9 maximum kinematic viscosity at 77 degrees F., the committee differed from proposed specifications of the American Society for Testing Materials which call for a 2.4 maximum at 100 degrees F., and no minimum. Chief engineers of the leading vaporizing burner manufacturers agreed on the minimum-maximum recommendations in another move toward cooperation, this time with the A. S. T. M., although most of them preferred considerably closer limits of viscosity.

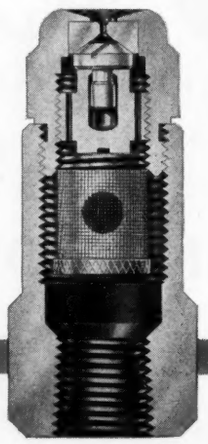
The specifications also call for an API gravity of 36 minimum at 60°F.; a minimum flash of 100°F. or legal; a carbon residue on 10% of 0.10 maximum; and a distillation range with a 10% point of 420°F. maximum, and an end point of 625°F. The pour point called for is 0°F., maximum.

The Oil Division of ICHAM forecasts that the fueloil market to users of vaporizing oilburners is the largest in the domestic heating field. Present fueloil requirements in the field are estimated at 38,690,000 barrels annually, and the industry now is gearing itself to the mass production of the various types of heating equipment in which vaporizing burners are used. In the first year of complete conversion of the industry's facilities, approximately 750,000 vaporizing burners will be produced, and after that, the rate will be 1,000,000 per year, the division reports.

Still Another Reason

Why BALLOFFET NOZZLES

by DELAVAN *are Preferred...*



All parts controlling atomization are stainless steel . . . greatest resistance to wear and corrosion. All other parts are brass except strainer screen which is monel metal.

BRASS BODY!

● Oil burner service men know from experience that there are fewer service calls where Balloffet design nozzles are used.

One of the reasons is that the brass tip, screwed into the brass adapter, conducts the heat of the combustion chamber away much faster than stainless steel.

This results in lower temperature of the oil left in the nozzle after shut-down . . . with less tendency to carbon. And carbon deposits cause service calls.

So if you want to reduce both carbon and service calls, use Balloffet design Nozzles by Delavan. Available in Hollow Cone Spray Type A, or Full Cone Spray Type B . . . from leading heating accessory jobbers everywhere.

Balloffet Design Nozzles Are Used As Original Equipment By Over Half The Leading Burner Manufacturers Who Do Not Manufacture Nozzles

MEMBER OHI OIL HEAT INSTITUTE OF AMERICA

DELAVAN ENGINEERING CO.

DES MOINES 9, IOWA

DE

Wisconsin Oil-Heat Assn. Works on Local Code

THE LEGISLATIVE COMMITTEE of the Wisconsin Oil-Heat Assn., Milwaukee, of which C. N. Smith is chairman, is working with local city officials now writing a new building code, in an attempt to get adoption of the new OHI code if possible. Similar work is being done with the State Industrial Commission, trying to improve the state code through adoption of the OHI pattern.

New York Oil Heating Outing

DESPITE A DOWNPOUR of rain which continued all day, 250 members and guests attended the annual outing of the New York Oil Heating Assn. at the Engineers Golf Club at Roslyn Harbor, L. I. on July 23. William Archer, of Sid Harvey, Inc., won the golf low-gross gold placque for the second year. The Doubting Dealers softball team, captained by Stan Walsh, defeated the Marauding Manufacturers, headed by Charles Triola, 3 to 2. The committee in charge was Dan Bierman, Arthur Hanson, Vincent Perotto and M. F. King.

American Chemical Society's Petroleum Div. Meets Sept. 9

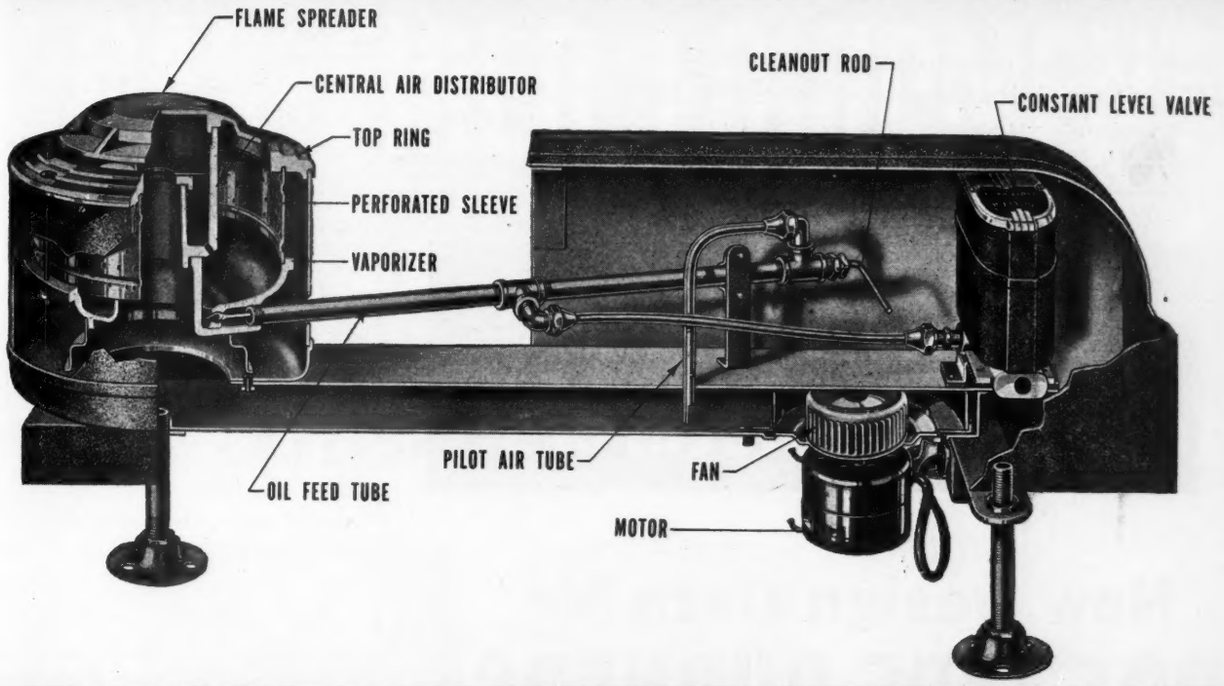
MORE THAN 1,000 CHEMISTS from the laboratories of the oil industry and the nation's technical schools will celebrate the twenty-fifth anniversary of the organization of the Petroleum Division of the American Chemical Society at Chicago during the week of September 9.

Numerous addresses dealing with problems of the industry will be delivered at sessions to be held in connection with the Society's 110th national meeting, according to an announcement by Dr. Stewart S. Kurtz, Jr., of Sun Oil Company, Nor

(*Continued on page 96*)

THE INSIDE STORY

OF THE MOST EFFICIENT BURNER FOR SMALL HOME HEATING



MILLER OIL BURNER

It is a vaporizing type mechanical draft burner expressly designed for the small home of 4 to 6 rooms. • All component parts are designed and built by one company with 102 years experience in building oil-burning devices. • Features LOW FIRST COST and LOW OPERATING COST to fit the budget of the average small home owner. • Has Underwriters' approval to burn Nos. 1, 2, or 3 oil. • Carries Commercial Standards label CS75-42 approval of performance. • The MILLER OIL BURNER is proven 100% by six years of consumer satisfaction. • It comes in one complete package — all controls included — room thermostat, draft regulator, limit control and transformer — ready for installation in warm air furnaces, or steam or hot water boilers. • COMPLETE COMBUSTION OF CARBON ON EACH OPERATING CYCLE.

VALUABLE FRANCHISES ARE AVAILABLE
Write or Wire for more details today!

THE MILLER COMPANY

HEATING PRODUCTS DIVISION · MERIDEN, CONNECTICUT

ILLUMINATING DIVISION	HEATING PRODUCTS DIVISION	ROLLING MILL DIVISION	FOUNDRY DIVISION
Fluorescent, Incandescent, Mercury Lighting Equipment	Domestic Oil Burners and Liquid Fuel Devices	Phosphor Bronze and Brass in sheets, strips and rods	Non-Ferrous Metal Castings

Industry Groups

(*Continued from page 92*)

wood, Pa., chairman of the Division. Bruce K. Brown of Chicago, general manager of research and development of the Standard Oil Company of Indiana, will speak on "Petroleum from 1921 to 1971" at a dinner on Tuesday evening, September 10.

Dr. Charles L. Thomas, research director of the Great Lakes Carbon Company, Chicago, is directing arrangements for the celebration. Dr. Thomas is vice-chairman of the Division, which with 1,300 members is the largest of the Society's eighteen professional Divisions.

P&H Industries Bureau Meets Chicago Sept. 19

THE ANNUAL MEETING of the Plumbing and Heating Industries Bureau will be held at the Palmer House, Chicago, Thursday, September 19, it has been announced by Henry S. Blank of Dayton, Ohio, Bureau president.

E. J. Gossett, president of Bell & Gossett Co., Morton Grove, Illinois, is chairman of the committee making arrangements for the meeting. Other members of the committee are George E. Hoffman, manager, plumbing and heating department, Crane Co., Chicago, and Martin Weil, president, Weil-McLain Co., Chicago.

Officers of the Bureau, in addition to Mr. Blank, are A. B. Anderson of Duluth, president of the Duluth Plumbing Supplies Co., vice president; E. N. McDonnell, president of McDonnell & Miller, Chicago, treasurer; and Norman J. Radder, secretary.

Old Timers Club Starts Revival after War Years

FOLLOWING TWO MEETINGS of the regional directors of the Old Timers Club during the Philadelphia oilheating show, regional activities are to be resumed, and a meeting of the membership is being planned at Cleveland during the week of the National Heating and Ventilating Show. Activities of the Club were suspended during the war period when most of the membership was too busy and too scattered to attend such social affairs.

Regional directors are trying to contact members, but in many cases addresses have changed in recent years, and mail is returned unclaimed. If you have been an Old Timer in the past, and have changed your mailing address in recent years, please notify the Old Timers' Club, Room 1205, 232 Madison Ave., New York 16, N. Y. Your regional director will be notified and the record kept straight.

Supplies of application blanks, certificates of membership, and the "hourglass" insignia pins are being replenished as fast as possible, and soon will be available again.

Directors at their last meeting voted to raise annual dues to $2.00 a year, and increase Life Membership dues to $20.00. Requirements for new members have been increased to 15 years, four years of which can be in war service, either civilian or military, provided the applicant is back in the industry at the time of application.

Firebox Technicalities Covered In New England Lectures

THE CLOSE and important relation between firebox design and the problems of burning cat-cracked fuel oils properly was the highlight of technical talks given by J. D. McCullough to groups of oilburner

(*Continued on page 100*)

NOW AVAILABLE to all Manufacturers!

New Design Data for POT-TYPE BURNERS

This new Socony-Vacuum development enables pot-type burners to operate on a No. 2 catalytically cracked fuel oil of as low as 26 gravity. That means lower heating costs for users of this popular type of burner—more satisfied customers for *your* product!

Exhaustive tests in our Mobilheat Laboratories have proved that our design modifications result in greater output of heat units per hour—a cleaner-burning flame—less carbon and soot—greater all-around combustion efficiency...*superior performance over old designs in every detail when burning No. 2 catalytically cracked fuel oil!*

Our suggested design changes are basically *simple*—won't upset present installation principles or operating practices. In fact, they promise to increase the ever-growing demand for oil heat throughout the country. Write for details.

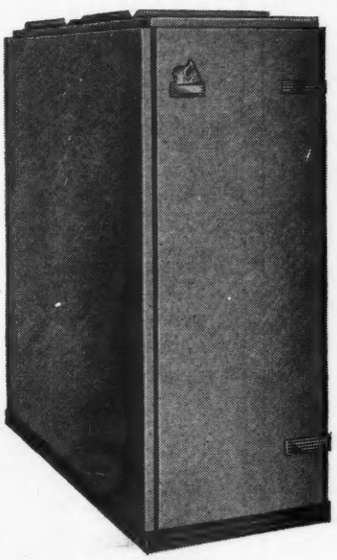
Mobilheat

SOCONY-VACUUM OIL CO., INC.

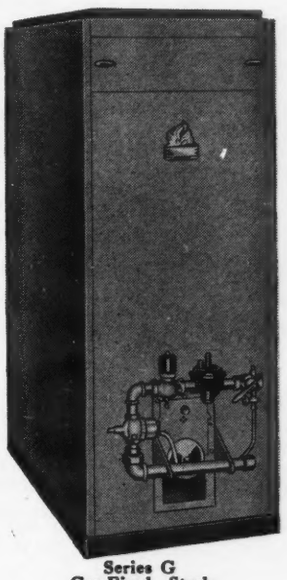
26 BROADWAY, NEW YORK 4, N. Y.

Luxaire's NEW GAS-FIRED EQUIPMENT

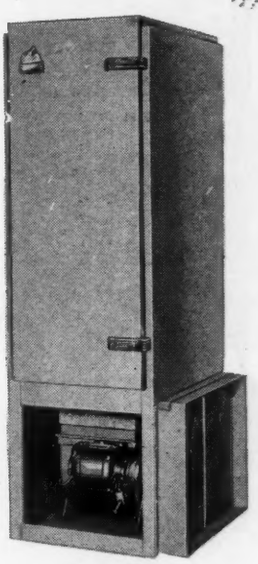
Everything the market demands!



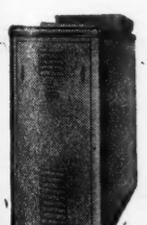
Series A
Gas-Fired, Steel
Air Conditioning Unit



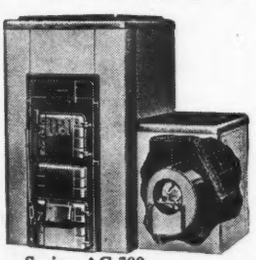
Series G
Gas-Fired, Steel
Gravity Furnace



Series H
Gas-Fired, Steel Utility
Air-Conditioning Unit

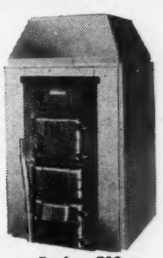


Series 8000
Oil-Fired, Steel
Air Conditioning Unit



Series AC-700
Coal-Fired, Steel
Air Conditioning Unit

. . . SMART STYLING
. . . DISTINCTIVE FEATURES
. . . EFFICIENT OPERATION
. . . COMPLETELY AUTOMATIC
. . . EASY TO INSTALL
. . . EASY TO SERVICE
. . . and has passed the latest requirements of the American Gas Association



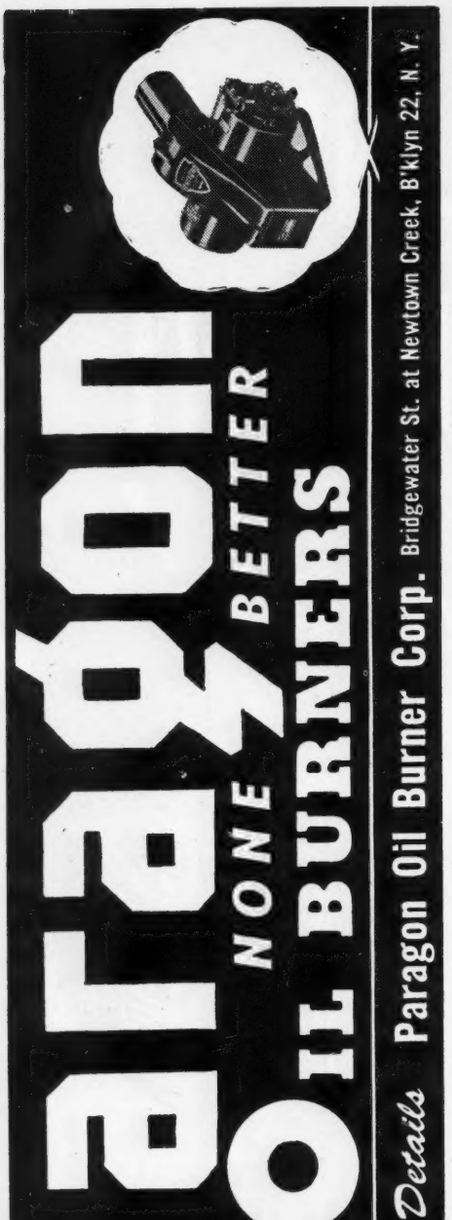
Series 700
Coal-Fired, Steel
Gravity Furnace

Series C
Coal-Fired, Cast
Gravity Furnace

THE C. A. OLSEN MFG. CO. - ELYRIA, OHIO

Luxaire HEATING & AIR CONDITIONING UNITS

fueloil
& oil heat



Industry Groups

(Continued from page 96)

dealers and servicemen as part of the educational program of the Oil Heat Institute of New England. The talks were given in Cambridge, Mass., Manchester, N. H., and Portland, Me.

The talks covered basic aspects of designing and building fireboxes for automatic oilburners, starting with the reasons fireboxes are needed for atomizing type burners, covering size and dimensions, and outlining special design features needed on many installations to arrive at best possible combustion. Types of refractory materials for building fireboxes were described: materials not heated during manufacture, and kiln-fired materials; also firebrick of ordinary heavy weight, and lightweight firebrick. Slides were shown to bring out the pronounced gain in efficiencies which resulted from using lightweight refractories instead of old-style heavy firebrick for the fireboxes of automatic oilburners.

Talks by J. D. McCullough and other authorities on combustion are being arranged through The Babcock & Wilcox Company, New York, for other groups in the oilheating industry, and equipment dealer and fuel oil organizations are being informed that speakers are available to discuss modern combustion and firebox problems.

Indoor Climate Institute Plans Special Meeting

AT A BOARD OF DIRECTORS meeting of the Indoor Climate Institute, held on June 18, 1946, at the Book-Cadillac Hotel, Detroit, plans for the Institute's activities for the coming year were discussed and approved. In order that the entire heating industry may receive first hand an outline of the plans of the Institute's 1947 operation, invitations are being prepared for a meeting to be held in the Italian Gardens of the Book-Cadillac Hotel, the morning of August 15, 1946, at which time these plans will be outlined to presidents, secretaries, managing directors and chairmen of publicity committees of all trade associations in every branch of the heating industry, as well as representatives of trade and shelter magazines. Detailed announcements of the meeting subsequent to August 15th.

They Call Me "SEALY"

Here's Why!

RC OIL SEAL

does a BANG UP job on oil burners, refrigerators, automobiles and Diesel engines.

It seals tight and stays put even against high pressure and vibration, yet remains semi-plastic. Connections are easily broken when necessary.

You can use it on metal to metal surfaces as a gasket as well as on all threaded connections.

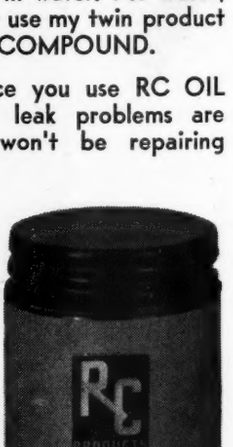
It is good for oil and oil derivatives, ammonia, Freon, gas, alcohol and gasoline.

It is soluble in water. For water, steam or air use my twin product RC JOINT COMPOUND.

Brother, once you use RC OIL SEAL your leak problems are over—you won't be repairing repairs!

NON-BREAKABLE PLASTIC CONTAINER with HANDY BRUSH IN CAP

for easy and economical application



Write for Free Sample

Ridgefield Chemical Products Company, Incorporated
Ridgefield, New Jersey

Distributor Territories Available

The Institute approved publication of a consumer booklet, "Look Under the Hood," telling an impartial, non-technical story of heating and the greater indoor comfort to be derived from installation of central heating plants and central heating systems automatically-fired. It is expected this booklet will be ready for distribution at the special summer meeting.

Steel Boiler Institute Elects

AT THE ANNUAL MEETING of the Steel Boiler Institute, Inc., held in Buffalo, June 18th, the following Officers and Directors were elected:

President—J. R. Collette—Titusville Iron Works Co.

Vice President—L. N. Hunter—National Radiator Co.

Secretary and Treasurer—R. A. Locke.

Directors — P. K. Addams — Fitzgibbons Boiler Co.; J. F. Johnston, Jr.—Johnston Brothers; E. M. Palmer—Kewanee Boiler Corporation; H. B. Steggall—Pacific Steel Boiler Division.

Executive Committee: Messrs. P. K. Addams, E. M. Palmer and J. C. Trefts, Jr. Commander R. A. Locke, former Manager of the Institute, after completing his service in the Navy, has returned to resume his old duties as Manager with M. L. Heminway (Executive Secretary during his leave of absence) as his Assistant.

The Headquarters office of the Institute has been transferred from New York to Philadelphia, where it is now established in the Land Title Building, corner of Broad and Chestnut Streets.

ASHVE Plans New Tests On Heat Flow Through Insulation

A NEW PROGRAM to provide more accurate and dependable values of thermal conductivity for most of the insulating materials on the market has been initiated by the Committee on Research of the American Society of Heating and Ventilating Engineers, New York, N. Y., according to the announcement of L. P. Saunders, Chairman, and will be carried out by the Technical Advisory Committee on Insulation.

The first step in the program, and the one which is now actively under way, is the checking and accrediting of the laboratories which will do this actual testing in accordance with the new ASTM Code.

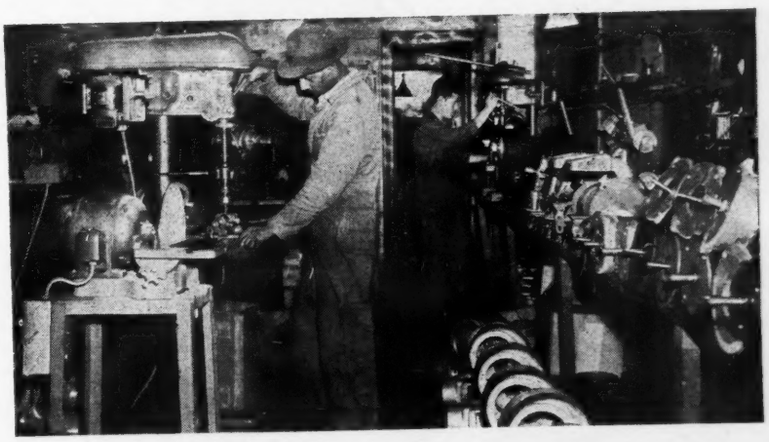
Burner Price Ceilings Raised Second Time

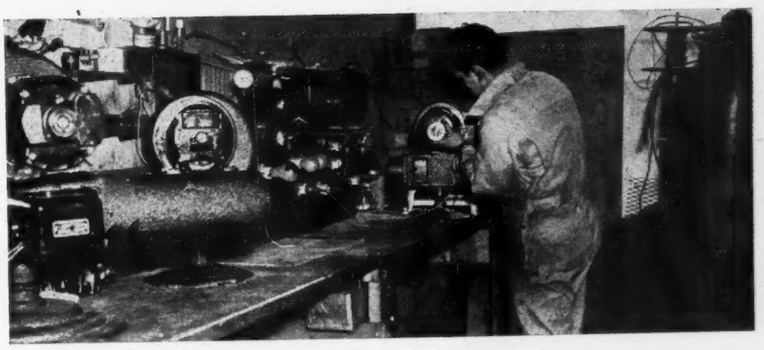
DOMESTIC OILBURNER price ceilings were raised an additional 5.5% on July 26, by No. 24 under Section 2.4 of Order 48 under MPR 591. This second advance since V-J Day brings the price level 15% above the burner prices of October 1941.

The increase is the minimum required by law under OPA's reconversion pricing formula. To compensate for increases in their cost, resellers are permitted to increase their maximum prices in effect on June 29, 1946, by the resulting percentage increase in their cost.

The price advance was allowed chiefly because of the advance in cost of materials, according to officials. Brass mill products, metal stampings, sheet metal, motors and electrical equipment and controls all have been given price ceiling increases by OPA and this necessitated the adjustment in oilburner prices. The action also takes cognizance of increases in wages approved by the Wage Stabilization Board.

One Picture Is Worth Ten Thousand Words...





Silent-Flame Oil Burners are the product of 29 years of oil heating experience.

Models from 1 gallon-per-hour to 20 gallons-per-hour.

Standard Equipment.

Precision Built.

SILENT-FLAME MFG. CO., Inc.

2315-27 Westchester Ave. **New York 61, N. Y.**

Burner & Tank Standards

(*Continued from page 50*)

Capacity Gals	Minimum Thickness	Weight Lb. per sq. ft.
7 to 285	14 gauge	3.125
286 to 560	12 gauge	4.375
561 to 1,100	10 gauge	5.625
1,101 to 4,000	7 gauge	7.50
4,001 to 12,000	¼ in. (nominal)	10.00
12,001 to 20,000	5/16 in. (nominal)	12.50
20,001 to 30,000	⅜ in. (nominal)	15.00

If adequate internal bracing is provided, tanks of 12,001 to 30,000 gallons capacity may be built of ¼ inch plate. For tanks larger than 1,100 gallons capacity, a tolerance of 10 per cent in capacity is permitted.

Joints shall be riveted and calked, brazed, welded or made tight by some equally satisfactory process. Tanks shall be tight and sufficiently strong to bear without injury the most severe strains to which they may be subjected in practice. Shells of tanks shall be properly reinforced where connections are made. All connections to underground tanks and tanks inside buildings shall be made through the top of tank above the liquid level, except that tanks of not over 275 gallons capacity may have one bottom connection for gravity feed and one opening for any approved key stem gate valve to facilitate cleaning or for a scavenging line to be run to the outside and capped oil tight when not in use.

Pressure tanks shall be designed for at least six times the maximum working pressure.

Prior to installation, underground and enclosed tanks shall be protected against corrosion on the outside in a manner satisfactory to the governing body, but in every case at least equivalent to two preliminary coatings of red lead followed by a heavy coating of hot asphalt.

NOTE: Tanks labeled by Underwriters' Laboratories have been tested and examined for compliance with these regulations and detail standards covering their design and construction.

For fuel oil heavier than 35° A.P.I. tanks may be made of concrete, in accordance with the Standards of the National Fire Protection Association for the Design and Construction of Concrete Fuel Oil Storage tanks.

All tanks having capacity in excess of 1,600 gallons shall be equipped with manhole of 18" minimum diameter and manhole well with suitable cover at grade level.

8. SETTING OF TANKS

Underground tanks shall be set on a firm foundation and surrounded with soft earth or sand well tamped in place. Where necessary to prevent floating they shall be securely anchored or weighted.

Inside storage and auxiliary tanks shall be securely supported by substantial incombustible supports to prevent settling, sliding or lifting.

Outside aboveground tanks shall be set on a firm foundation. Those more than one foot above the ground shall have supports of masonry or protected steel, except that wooden cushions may be used. No combustible material shall be stored under or within 10 feet of outside aboveground tanks.

Tanks shall be installed in accordance with local or state ordinances, where such ordinances are in effect.

9. INSTALLATION OF TANKS INSIDE BUILDINGS

Oil supply tanks larger than 60 gallons capacity shall not be located in buildings above the lowest story, cellar or basement.

Unenclosed inside storage tanks and auxiliary tanks shall not be located within 7 feet, horizontally, of any fire or flame, unless authorized by local ordinances.

Oil supply tanks located inside buildings shall not exceed 275 gallons individual capacity or 550 gallons aggregate capacity (in one building) unless installed in an enclosure or casing constructed as follows:

The walls of the enclosure shall be constructed of reinforced concrete at least 6 inches thick or of brick at least 8 inches thick, and shall be bonded to the floor. The space between the tank and the enclosure shall be completely filled with sand or well tamped earth. Where the floor or other construction immediately above the tank is of fire-resistive construction capable of safely sustaining a load of 150 pounds per square foot, the walls of the enclosure shall be carried to a height not less than 1 foot above the tank and the space filled with sand or well tamped earth to the top; otherwise the enclosure shall have a top of reinforced concrete at least 5 inches thick or of equivalent construction.

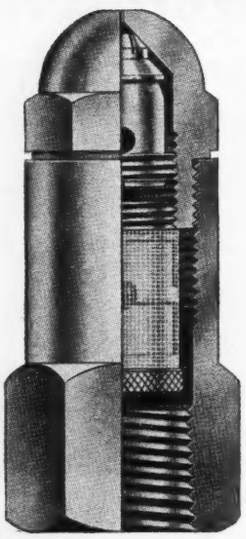
Instead of an enclosure as above described the tank may be encased in reinforced concrete not less than 6 inches in thickness, applied directly to the tank so as to completely eliminate any air space.

In buildings of ordinary construction the nominal gross capacity of tanks shall not exceed 5,000 gallons.

In fire-resistive buildings the nominal gross capacity of the tanks shall not exceed 15,000 gallons.

In any building, if in a fire-resistive or de-

Here's SURE-FIRE Equipment



OIL BURNER NOZZLES

Edco's standard oil burner nozzles are universally recognized as the finest of their kind obtainable. Skillfully made and individually tested for spray angle, atomization and actual rated capacity. Large capacity Monel strainers make cleaning seldom necessary.

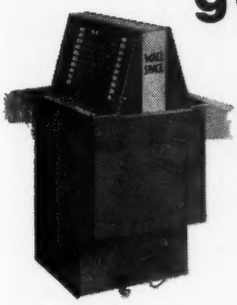
AIR CONES—STABILIZERS

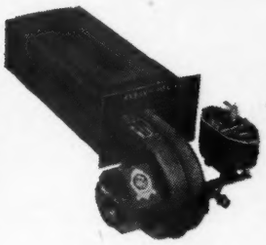
For higher CO_2's—The Stabilizer holds the electrodes and nozzle in firm position while the twist of the fins gives a swirl to the air flow which is carried through by the air cone at just the right point for mixture with the nozzle spray.

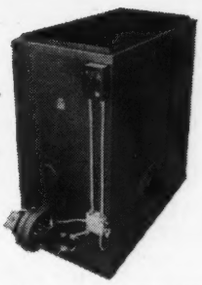
EDCO

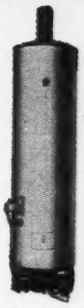
EDDINGTON METAL SPECIALTY CO.
P. O. BOX K, EDDINGTON, PENNA.

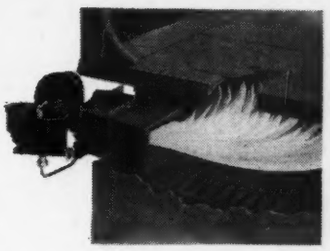
DEALERS—for FUTURE profits
get lined up *Now* with KRESKY


FLOOR FURNACES


OIL BURNERS


FORCED AIR FURNACES


WATER HEATERS

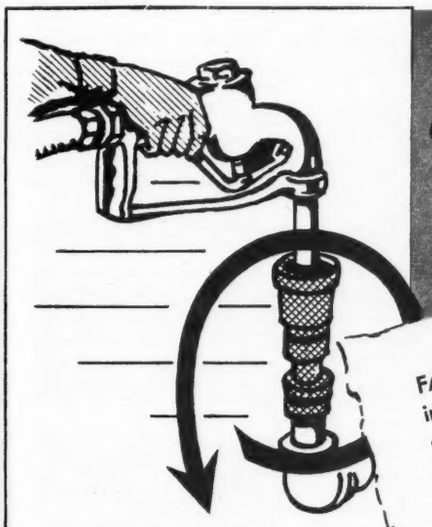

RANGE BURNERS

Listed by Underwriters' Laboratories, Inc. To Burn No. 3 Oil (Diesel) or lighter

Wise dealers see in today's shortages the handwriting on the wall of tomorrow's profits. That's why so many are lining up now with Kresky, seeing in today's unprecedented demand a promise for future opportunity. ★ Always a money maker for dealers due to its versatility and adaptability to a wide list of uses, the Kresky line includes Conversion Burners, Range Burners, Floor Furnaces, Water Heaters and Forced Air Units for small homes. ★ Delivery only to old customers now, but inquiries are invited from live dealers with an eye to the future.

KRESKY MANUFACTURING COMPANY
Pioneers in Oil Burning Equipment Since 1910
PETALUMA, CALIFORNIA

Kresky Oil BURNERS



A portable, quick, handtight *connection* between gun *and* fill pipe..

FASFILL is a loose-tight connection, combining advantages of both. Adaptable to all fill lines. Sealing diaphragm permits faster filling and stepped-up pumping speed. FASFILL eliminates blowbacks, fill drip, and need for making up tightly-threaded connections. A complete connecting unit in itself — provides for 2", 1½", and 1¼" Male and Female connections. FASFILL speeds fuel oil delivery — eliminates blowbacks — saves time and labor.

only $11.50 COMPLETE
(SET of THREE SIZES)
In Carrying Case
F.O.B. CAMBRIDGE

SCULLY SIGNAL COMPANY
88 FIRST ST., CAMBRIDGE 41, MASS.

FASFILL

T.M. REG. U.S. PAT. OFF.

tached room cut off vertically and horizontally in an approved manner, from other floors of the main building, the nominal gross capacity of tanks shall not exceed 50,000 gallons with an individual tank capacity not exceeding 25,000 gallons.

Tanks shall be installed in accordance with local or state ordinances, where such ordinances are in effect.

10. INSTALLATION OF UNDERGROUND TANKS

Oil supply tanks should preferably be located outside of buildings and underground with top of tank below the level of all piping to which the tank is connected, to prevent discharge of oil through a broken pipe or connection by siphoning.

Underground tanks shall be so buried as to have a cover of earth not less than 2 feet thick, or shall be covered with not less than 1 foot of earth on top of which shall be placed a slab of reinforced concrete not less than 4 inches thick. The slab shall be set on a firm, well tamped earth foundation and shall extend at least 1 foot beyond the tank in all directions. Where tanks are buried underneath buildings such a concrete slab shall be provided in every instance.

Tanks shall be installed in accordance with local or state ordinances, where such ordinances are in effect.

11. INSTALLATION OF OUTSIDE ABOVEGROUND TANKS

Outside aboveground tanks shall not be located in closely built-up areas.

The distance from outside aboveground tanks to line of adjoining property or nearest building shall not be less than set forth in the table below:

Capacity of Tanks, Gallons	Distance, Minimum Feet
750 or less	5
751 to 1,100	10
1,101 to 3,000	20
3,001 to 21,000	25
21,001 to 31,000	30
31,001 to 45,000	40
45,001 to 64,000	50
64,001 to 80,000	60
80,001 to 128,000	75
128,001 to 200,000	85
200,000 to 266,000	100
266,001 to 400,000	150
400,001 to 666,000	250
666,001 to 1,333,000	300
1,333,001 to 2,666,000	350

For tanks of over 400,000 gallons capacity, a minimum distance of 175 feet to adjoining property or nearest building may be permitted, provided that an approved type of fire extinguishing system is installed for the tank and covering other parts of the yard or system.

For tanks permitted from 50 feet and up to 175 feet of building or property line, the capacity may be increased 33 per cent if the tank is provided with an approved fire extinguishing system.

The minimum distance from tanks to adjacent tanks shall conform to the following table:

Capacity of Tanks, Gallons	Minimum Distance to any Other Tank
18,000 or less	3
18,001 to 24,000	5
24,001 to 48,000	10
48,001 to 75,000	13
75,001 to 100,000	15
100,001 to 2,500,000	One tank diameter

Tanks shall be so located as to avoid possible danger from high water. When tanks are located on a stream without tide, they shall, where possible, be down stream from burnable property.

Embankments or Dikes—In locations where aboveground tanks are liable in case of breakage or overflow to endanger surrounding property, each tank shall be protected by an embankment or dike. Embankments or dikes shall be made of clay-core cinder-fill, earthwork, masonry or approved concrete. Such dikes shall have a capacity of not less than that of the tank or tanks surrounded. Earthwork embankments shall be firmly and compactly built of good earth from which stones, vegetable matter, etc., have been removed, and shall have a flat section at the top of not less than three feet and a slope of at least 1½ to 1 on both sides. Small tanks with capacities of not over 25,000 gallons each may be grouped and a dike built around the group of tanks.

Embankments or dikes shall be continuous with no openings for piping or roadways. Piping should preferably be laid over or under embankments.

Tanks shall be installed in accordance with local or state ordinances, where such ordinances are in effect.

◈

(Due to space limitations it was not possible to run the complete standards in this issue. The balance will appear in the September number.)

Look INTO THE FLAME WITH A "COMBUSTION XRAY LENS"

To Check OIL FIRES!

We've been able to obtain a limited number of lenses which will permit you to look right into the center of the flame to see how the oil burns—while at the same time *protecting your eyes* against the injurious rays of the fire box. You can now observe and check the fire for black streaks, ragged ends, uneven or torch-type flame, smoky tips, "cold fire" and then make the necessary adjustments.

This will also enable you to check the claims that we've been making for KLEEN-FLO. A real "before and after" test. First observe the fire as is—then add KLEEN-FLO to the tank as instructed—24 hours later look again through the "Combustion XRAY Lens." You should notice a definite improvement—a bright, hot fire, clean tips, elimination of black streaks and ragged ends—a clean, steady and more efficient oil fire. Take advantage of our special offers listed below—TODAY.

SPECIAL

COMBUSTION TRIAL OFFER

1 "Combustion XRAY Lens"
1 Quart KLEEN-FLO
BOTH FOR $1.50

FREE OFFER A case of KLEEN-FLO at dealer price and a "Combustion XRAY Lens" free of extra cost

COMBUSTION UTILITIES CORPORATION

1451 BROADWAY NEW YORK 18, N. Y.

New England Distributor

ALLIED APPLIANCE COMPANY

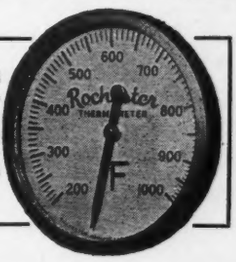
111 Berkeley Street Boston 16, Mass.

ROCHESTER OIL BURNER TANK GAUGES . . .
SAFE WITH PRESSURE FILLING!

WITH the rapid trend to pressure filling of oil burner storage tanks, make sure your installations include Rochester's "DUAL-DIAL" gauge. It's safe for pressure filling. There can be no leakage of oil or fumes through gauge head because dial chamber is completely sealed from tank opening. Gauge readings are magnetically transmitted from float rod (in tank) to pointer assembly in sealed case (outside tank) . . . just as accurately as a compass! Once installed properly, you can forget them . . . one less worry for you and your customer.
Rochester makes thousands of gauges for pressure vessels used in many industries. They are designed to withstand high overloads and still remain accurate. This is one of the reasons Rochester gauges are Underwriter listed. You're safe and sure with Rochester!

ROCHESTER MANUFACTURING CO., INC.
19 Rockwood St. Rochester 10, N. Y.
Canadian Representatives R. W. Anderson and Co., 125 Redpath Avenue, Toronto, Ontario, Canada.

FLUE GAS THERMOMETERS
Check combustion efficiency and heat distribution on your oil burner installations with Rochester Flue Gas Thermometer. Ask for Model 1750-C1.



Rochester Guaranteed Accuracy
ENGINEERED INSTRUMENTS
LIQUID LEVEL, TEMPERATURE AND PRESSURE GAUGES

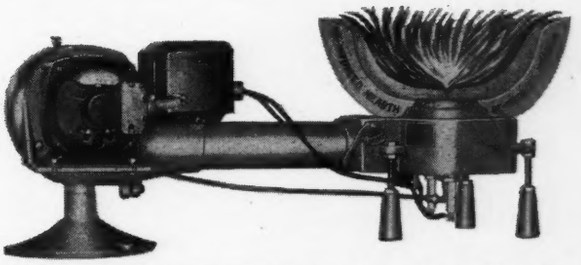
THE JACKSON OIL BURNER
OFFERS
ECONOMY • DEPENDABILITY • QUALITY • PERFORMANCE

15% To 25% OIL SAVING!

- Fits any gun type burner.
- Easily installed.
- No moving parts in combustion chamber.

made possible by
JACKSON CONVERTER ATTACHMENT

- Extremely quiet in operation.
- Odorless.
- No carbon deposit.
- Moderately priced.
- Increases combustion efficiency of gun type burners 15% to 25%.
- Unbelievably high CO_2.



- Exceptionally low operating cost made possible by a scientifically designed air mixing chamber.
- 80% to 83.5% efficiency by actual test.
- Basket-type flame in suspension fills entire combustion chamber producing uniform heat.
- Time tested and proved in thousands of installations.
- Nozzle never becomes clogged with carbon, no moving parts in combustion chamber, once adjusted, always adjusted.
- Three models all capacities.
- Can be installed in warm air furnaces, steam or hot water boilers.

It will pay you to find out if there is a Jackson Dealership franchise open in your vicinity. We will gladly let you know.

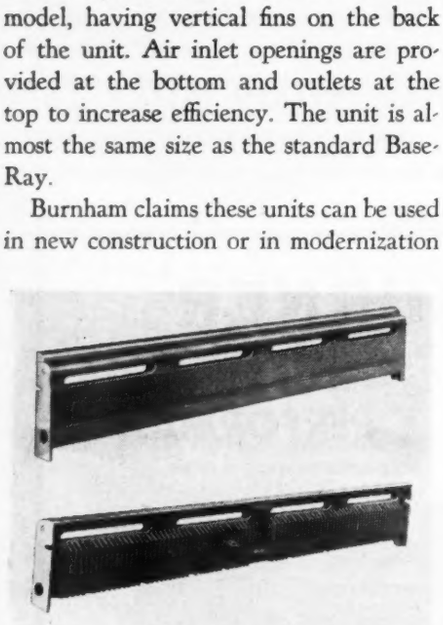
Jackson Oil Burner Company
413 DIME BUILDING *CAdillac 3399* **DETROIT 26, MICH.**

New Products

Hy-Power Base Ray Unit For Larger Installations

BURNHAM BOILER CORP., Irvington, N. Y., manufacturer of the Base-Ray Radiant Baseboard, has announced a Hy-Power model for stores, showrooms and public buildings with minimum baseboard space and for larger room than usually found in the homes. This unit delivers about 60% more heat than the standard model, having vertical fins on the back of the unit. Air inlet openings are provided at the bottom and outlets at the top to increase efficiency. The unit is almost the same size as the standard Base-Ray.

Burnham claims these units can be used in new construction or in modernization



Hy-Power *baseboard radiator in front (top) and rear views.*

work, as no structural changes are required for installation. The units are set in place, a wood molding installed along the top to complete the effect of a baseboard, and painted to match the walls. The radiant baseboard radiator can be used with any hot water, two-pipe steam or vacuum system.

◈

Adds Vibration Insulators

THREE NEW VIBRO-INSULATORS, devices of rubber and metal to cushion industrial and manufacturers original equipment of all types, have been added to its line, it is announced by The B. F. Goodrich Company, Akron, Ohio. The three new products are listed as No. 130, 133, and 144.

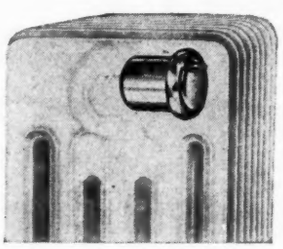
Recommended for use as feet or bumpers for blowers, fans, pumps, etc., the rubber is of 45 durometer hardness and gives quieter operation, greater stability of equipment and vibration absorption.

◈

Automatic Valve Vents Hot Water Radiators

A NEW AUTOMATIC air valve for hot water radiators, convectors and panel radiation is announced by Maid-O-Mist, Inc., Chicago 41, Ill.

The valve, designated No. 27 Auto-Vent automatically relieves air from



trapped hot water radiators, pipe lines, etc., and is recommended for installation on all free standing radiators, base board radiation and convectors without the use of air chambers where pressures do not exceed 50 lbs.

As air accumulates in the radiators or pipe line it is automatically released assuring circulation throughout the entire system, with more even heat and less fuel consumption.

The valve 2½" long x 2" in diameter is attractively designed and built of brass with Nickel Plated finish. Has monel metal bearings and levers, and equipped with monel metal spring and Neoprene valve seat, which is unaffected by high temperature, or oil.

◈

New Rheem Water Heaters In 30 and 50 Gallon Sizes

PRODUCTION of a new, oilfired storage-type water heater, with the entire tank heavily insulated and with all parts completely housed in a white baked enamel steel jacket, is announced by Rheem Manufacturing Company. A completely automatic unit, regulated by the standard float-type control, the heater operates by gravity feed and requires no electrical connections. Standard sizes are 30 and 50 gallons of hot water.

Unique design features include a new Rheem-developed low-draft pot-type burner capable of operating with drafts as low as 0.03 inches of water pressure. Design also includes a new low-flame pilot that burns only a fraction of the oil normally consumed by "low-fire" operation. Full 1½-inch thick insulation is claimed to be possible because the extra-small pilot flame creates so little heat when the main burner is extinguished. Draft regulator is enclosed in the heater jacket, and is factory set for proper operation.

◈

Anti-Syphon Valves Again Marketed By Preferred

ANTI-SYPHON VALVES, required by most codes when there is danger of syphoning oil out of storage tanks, again are being offered by Preferred Utilities Mfg. Corp., New York 23. These are weight-loaded valves which are opened by the pump suction lifting the weight and close as soon as a break in the line allows air to enter the line. Type B-5 holds against a 5-ft. head and the B-10 against a 10-ft. head of oil.

These anti-syphon valves are tapped for ¾ in. pipe and are supplied for suc-

tion lines of ⅜, ½, ¾ or 1 in. diameters for use with oils of 26° gravity or lighter. The valves are listed by Underwriters Laboratories and approved by the New York City Board of Standards and Appeals.

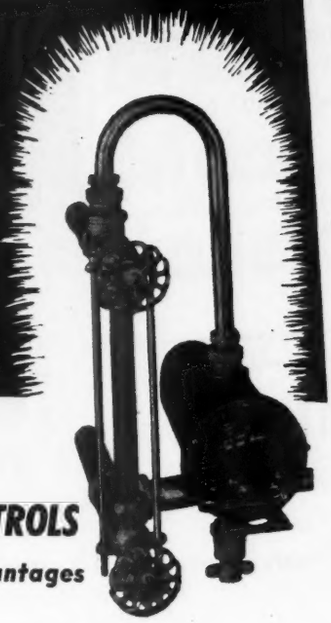
◈

Company Has Window-Type Summer Conditioning Unit

A SELF-CONTAINED room air conditioning unit, which cools, filters, de-humidifies, as well as ventilates, is being manufactured

No *other* Low Water Cut Off has

ALL THESE FEATURES



...Only

NEWARK CONTROLS

can offer the advantages of:

ALL BRONZE CONSTRUCTION—Resists rust, scaling and corrosion; prevents possible loss of operating efficiency.

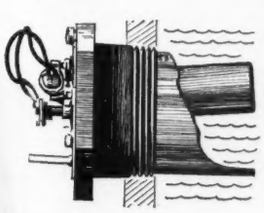
LOW WATER CUT OFF and PRESSURE CONTROL—Combined in a single compact unit; provides double protection.

SIMPLIFIED DESIGN—Sound engineering and simplified design; reduces troublesome sediment problems.

EASY INSTALLATION—External installation of Newark low water cut off is a quick and easy job; accurate fittings for mounting in the gauge glass tappings are supplied.

All these features explain why dealers recommend Newark Controls for positive protection on every type of automatically fired heating boilers. Analyzed point by point, Newark Controls assure better service and greater user satisfaction. Approved by Underwriters Laboratories.

LOW WATER CUT OFF AND ADJUSTABLE PRESSURE CONTROL MOUNTED WITHIN BOILER.



- All bronze rust-resistant construction.
- Engineered to minimize boiler sediment problems.
- A size for every type of boiler.
- Request information on controls mounted inside boiler.

Write today for dealer details on the complete line of Newark low water cut offs with adjustable pressure control.

NEWARK CONTROLS

15 WARD STREET
BLOOMFIELD
NEW JERSEY

Lochinvar

Oil Fired WATER HEATER

NEW

STREAMLINED

BASED ON TWO YEARS' DEVELOPMENT

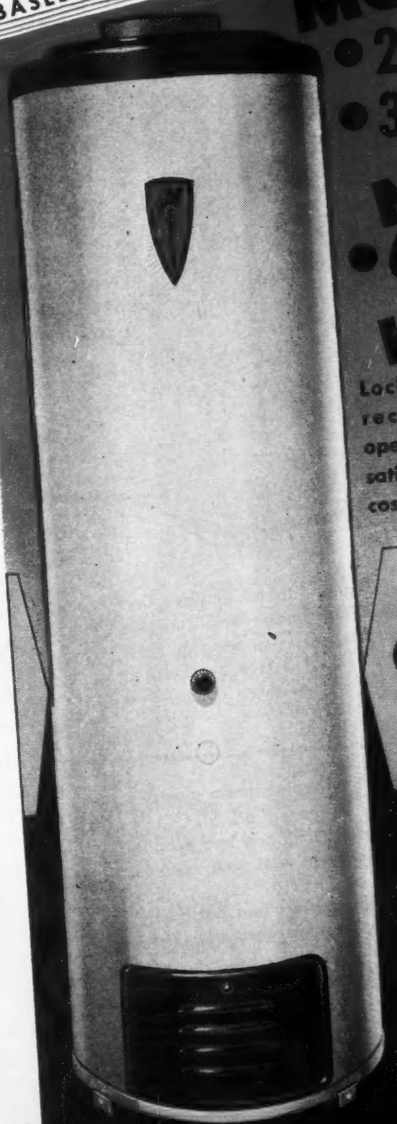
MODELS

- 25 Gallon
- 35 Gallon

NOW

- 60 Gallon

LATER



Lochinvar has a long record of successful operation and consumer satisfaction — low initial cost—low operating cost.

ALL CONTROLS ENCLOSED

with water temperature adjustment at finger tips

LOCHINVAR PRODUCTS

A DIVISION OF
MICHIGAN TANK & FURNACE CORP.
14247 TIREMAN AVE. • DEARBORN, MICH.

fueloil & oil heat

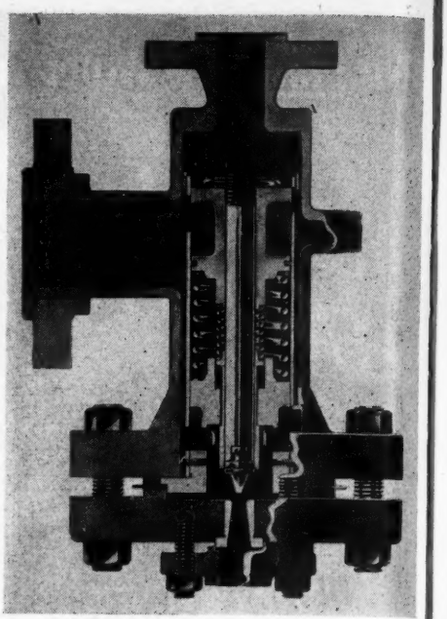
by the recently organized Pacific Manufacturing Corp., Cleveland, Ohio.

The new unit, of window-type, has a ½-horsepower motor-driven, hermetically sealed, twin-cylinder, refrigerant compressor, which with the condensing coil is in the section of the cabinet located outside the window. The room-side section of the cabinet contains filter, cooling coil, outlet duct and motor-driven fan. The equipment is enclosed in an attractively-designed metal cabinet 22½ inches wide, 34½ inches long and 13⅝ inches high.

Valve Protects Big Pumps

HAMMEL-DAHL CO., Providence, R. I., is offering a recirculating valve to eliminate centrifugal pump failures resulting from insufficient flow of fluid through the pump, causing overheating and destruction of the pump.

Insufficient fluid flow arises from failure of fixed recirculating orifices, failure of prime mover to drive the pump at sufficiently high speed or to restrictions in the discharge piping.



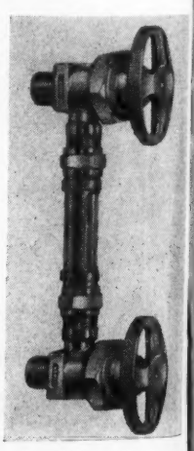
The system consists of an automatic recirculating valve operated from the fluid flow and designed to by-pass the minimum quantity of fluid required to eliminate pump overheating. As the quantity of fluid passing through the pump increases, the by-pass quantity is automatically throttled and is reduced to zero when the output of the pump is sufficient to prevent pump failure.

The valve may be installed in existing pump piping merely by removing any convenient elbow in the discharge piping upstream of all checks and stops.

New Henry Packless Valve Gauge Set

HENRY VALVE CO., Chicago 51, has announced a new gauge glass set featuring Henry Diaphragm Packless Valves.

The new set is recommended for installation where there is surging or splashing within the vessel. The packless valve construction eliminates valve stem packing. If the glass tubing should be accidentally broken while the valves are open, a safety ball check in each valve operates to keep the liquid from escaping and to maintain pressure in the vessel. Additional safety is afforded by a sturdy slotted metal guard



special solvents for 3 important jobs

SILOO FUEL OIL TANK SOLVENT

protects fuel storage tanks and burner equipment. It cleans sludgy fuel oil, Diesel fuel tanks and systems—prevents accumulations of sludge, gum, rust and acid—disperses water due to condensation. SILOO FUEL OIL TANK SOLVENT is 100% safe to use and store.

LOOSITE does a desludging job on engines that is thorough and time-saving. Sludge and gum are dissolved in a safe, gradual way—all working parts are cleaned effectively. LOOSITE is a big help to mechanics when used before teardown of gas and Diesel engines.

SILOO protects engines by keeping them clean—by holding harmful sludge in suspension. SILOO is perfect for tune-up and breaking-in new and rebuilt engines properly. Helps prevent rust and retards corrosion.
Bought by millions of satisfied users and nationally advertised in the Saturday Evening Post and thirty additional magazines.

SOLVENTS FOR ALL TYPES OF PETROLEUM RESIDUES
Petroleum Solvents CORPORATION
General Offices: 331 Madison Ave., New York 17
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DISTRIBUTORS AND JOBBERS—write for details today!

Make More Money Now

Here's a sure-fire big profit maker—just what many of your customers have been hoping to get. For this new R&I Combustion Chamber Baffle will reduce their fuel bills up to 20%.

Simply mail the folders, we'll furnish, to all your customers and you're sure to ring up extra profits.

R&I Baffle will fit any combustion chamber not over 16½" wide inside. The baffle cone is 10¼" in diameter.

Made of a tough refractory, reinforced in the legs and cone with stainless steel, this Baffle will take it.

Get them from your supply house. Write us for Bulletin OB-97.

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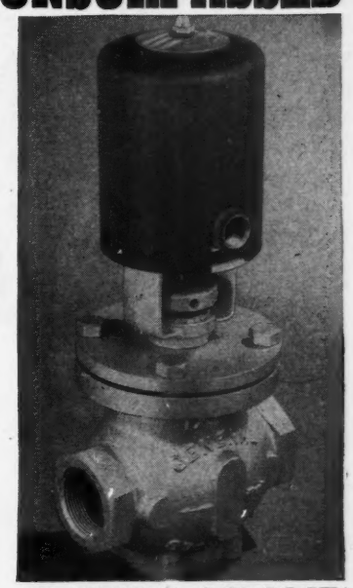
R&I Combustion Chamber BAFFLE

fueloil & oil heat

CONTROLS UNSURPASSED



G-1-1

HIGH PRESSURE MOTOR VALVE

HYDRAMOTOR units simplify your control valve installations. For commercial and industrial applications. Control light and heavy oils, gas, steam and water. Two-wire, current failure, normally closed, single seated. Have ample power and handle pressures up to 300 P.S.I. Gear trains are completely eliminated. Minimum number of moving parts are lubricated and sealed in oil for life with little effect from ambient temperatures.

FOR COMPLETE SPECIFICATIONS on motor-operated and other automatic temperature, pressure and flow controls write for the new 1946 Catalog 52C or contact Factory Branch or Distributor near you.

8-2

GENERAL CONTROLS
801 ALLEN AVENUE
GLENDALE 1, CALIF.

FACTORY BRANCHES: PHILADELPHIA • ATLANTA • BOSTON • CHICAGO • DALLAS
KANSAS CITY • NEW YORK • DENVER • DETROIT • CLEVELAND • PITTSBURGH
HOUSTON • SEATTLE • SAN FRANCISCO • DISTRIBUTORS IN PRINCIPAL CITIES

which protects the tubing while providing a clear view of the liquid column.

Forced brass valve bodies and fittings. ½" M.P.T. screw ends. Tubing is rated at 500 psi (cold) for lengths up to 10"; 420 psi, 11-20"; 340 psi, 21-24". Horizontal valve outlets are 15" center-to-center, standard. Standard tubing length, 12"; exposed length, 10".

◈

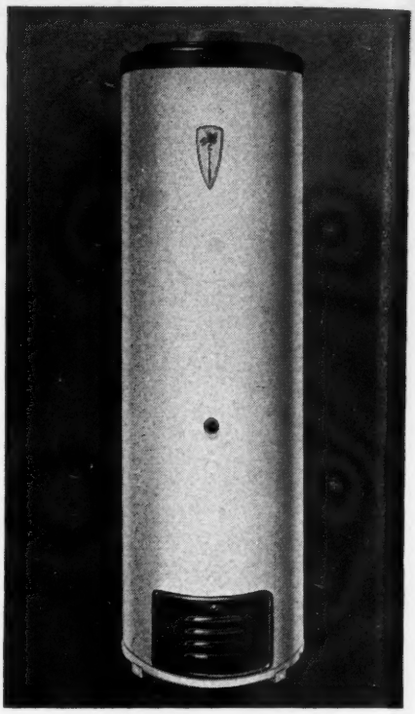
Lochinvar Water Heaters In Larger Tank Sizes

LOCHINVAR PRODUCTS is bringing out new streamlined models of their oilfired water heaters. The new models have been in process of development during the past two years.

The principal feature of these models is completely enclosed controls—everything inside the casing with the exception of an adjustment knob which extends at a convenient level for "finger tip" control of the water temperature.

Lochinvars are being equipped with a simple leveling foot which enables the installer to bring the heater to the proper vertical position by an adjustment screw in the foot.

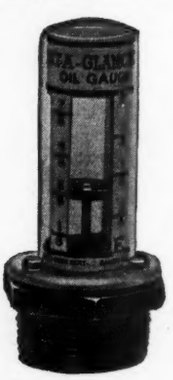
With the advent of the new models the range of sizes will be changed to give greater consumer satisfaction. The old 20 gallon will be replaced by a 25 gallon heater. The 30 gallon will be increased to a 35 gallon capacity, and the 40 gallon size will be eliminated. As materials become available later, Lochinvar will be produced in a 60 gallon size to reach the larger users.



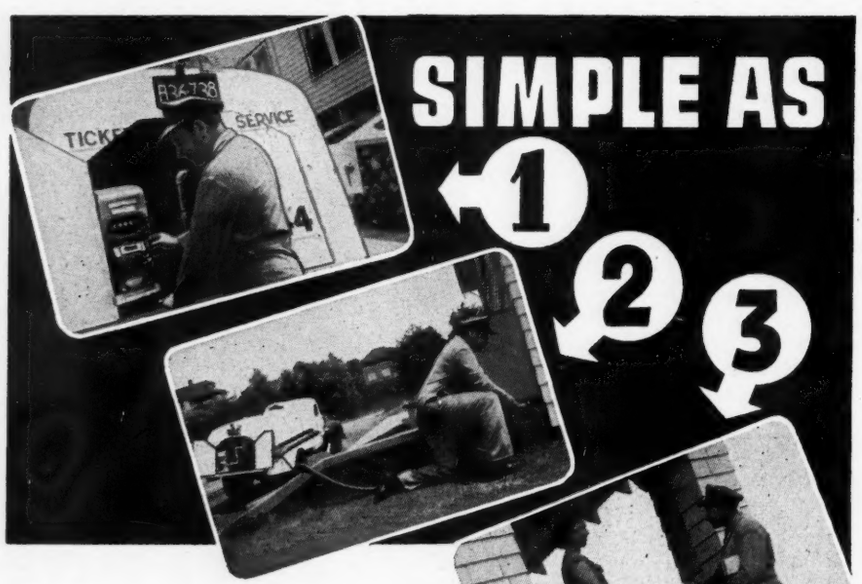
The Lochinvar Multiple-Stage Burner and controls have been improved. The burner and constant level valve have been built into a unit by being mounted on a common base, thus assuring proper relation between these two parts, and this unit can be removed and replaced very easily and quickly. Field adjustment of the pilot and high fire is unnecessary.

◈

Krueger Sentry Announces At-A-Glance Tank Gauge

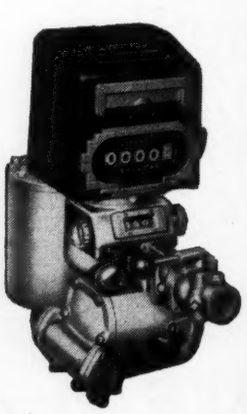


KRUEGER SENTRY GAUGE CO., Green Bay, Wis., announces the "At-A-Glance" Oil



Here's how more deliveries per day at lower cost can be attained! (1) The driver can pre-set the exact amount of oil to be delivered, (2) leave the truck and attend to the delivery himself at a distance of many yards. The delivery is measured and controlled directly on the truck meter and (3) the ticket printer provides a printed record of the transaction for both the customer and home office. Contact the nearest office and a Smith Meter Company representative will furnish complete information.

Illustrated, H-3Z Meter equipped with automatic set-stop, large numeral counter and ticket printer.



SMITH METER COMPANY

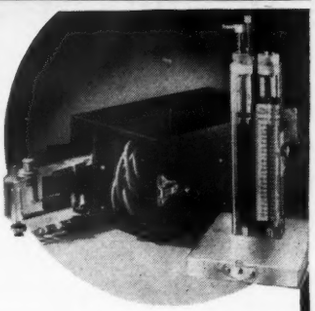
SUBSIDIARY OF A. O. SMITH CORPORATION

Factory–5743 Smithway, Los Angeles 22, Calif.

SALES OFFICES: NEW YORK, CHICAGO, HOUSTON, LOS ANGELES

Local Stocks at Convenient Points • Local Agents In All Principal Cities

DWYER COMBUSTION TEST *Instruments*



★ Designed for Your Use!

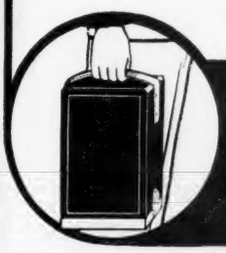
Practical suggestions given by sales, service and installation men all over the country helped us develop this test set—CO_2 Indicator, Draft Gage, and Stack Thermometer in one convenient carrying case.

★ Built to Last!

Non-corrosive monel fittings—simple construction with no complicated or hidden parts—unbreakable, not a molded product but *machined from a solid block* of transparent plastic material with all holes drilled and reamed for accuracy!

★ Permanent Accuracy

Cut service costs and build satisfied customers with Dwyer tested installations. Let us recommend the proper instruments for your particular use.



Write for Bulletin 22 Today

F. W. DWYER MFG. CO.

569 W. WASHINGTON BLVD., CHICAGO

DWYER TRANSPARENT

Parakem SLUDGE REMOVER

FOR GREATER PROFITS!

The Fuel Oil Conditioner Backed By More Than 100,000,000 Gallons of Fuel Oil Experience

Gives you repeat business—your customers need Parakem to prevent sludge deposits in the storage tank, lines and oil burner. Parakem improves atomization, allows quicker starting—results in a brighter, cleaner flame.

Parakem is specially priced for resale by dealers at good mark-up.

Sold in one and 5 Gallon Cans —15, 30 and 53 Gallon Drums

Write for complete details and prices **TODAY!**

Paragon Oil Company

75 Bridgewater Street Brooklyn 22, N. Y.

FOR HOT WATER HEATING AT ITS *BEST*

Start with this POTENT PAIR

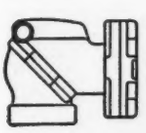
If you really want to profit from the rapidly growing demand for hot water heating, sell Triplex Flow Control Systems, too! Start with the Direct Drive Circulator (supplies hot water instantly, whenever and wherever needed). Add the Universal* Flow Control Valve (prevents gravity circulation during "off" periods) and you'll have a potent pair that automatically balances heat loss with heat supply—assuring *controlled heat,* unvarying comfort, lower fuel costs. Include all the other Triplex products of advanced design and precision construction—and you can assure even more dependable service, lower installation costs, abundant hot water for domestic use, too. In other words, the Triplex line will enable you to talk in terms of *hot water at its best!* Write today for new catalog and price sheet.

HOMES

APARTMENTS

STORES

FACTORIES



*Made in two sections, divided at a 45° angle, the Flow Control Unit may be assembled in line (180°) for use on either horizontal or vertical mains, or at 90° for angle pattern installation.

Triplex HEATING SPECIALTY CO., PERU, INDIANA

In addition to units illustrated, the Triplex line includes—Direct Drive Horizontal Circulators, Indirect Drive Circulators, One-Pipe Distributors, Expansion Tanks, Air Eliminators, Water Mixing Valves, Air Vent Valves, Indirect Heaters, Tankless Heaters, Relief and Pressure Reducing Valves, Control Units, Electrical Controls, Barometric Draft Dampers, Sump Pumps.

SEE YOUR WHOLESALER TODAY

Gauge, developed for oil tanks for either 1½" or 2" opening. It is designed for basement tanks of all sizes, and can be read from any direction. The reading scale is securely encompassed between two circular domes, providing four reading windows.

Listed as Standard by Underwriters Laboratories, Inc., "At-A-Glance" is a simple lever action gauge that moves indicator disc up or down as contents in tank raises or lowers. Eight exclusive patented features in the construction of "At-A-Glance" gauges make them unique in that they use no gears, cams, springs nor magnets.

Announce New Rotary Burner For Automatic Heavy Oil Use

THE LANCASTER horizontal rotary oil-burner for commercial and industrial work has been put on the market by the Lancaster Heat Transfer Co., Brooklyn 1, N. Y. The burner is of conventional design with the cup driven at motor speed through a solid shaft. The pump is driven by a worm cut in the main shaft on some models, and pump sets on other types.

The line is built in sizes with maximum capacities ranging from 15 gph to 100 gph, and 220 volt, 3 phase motor sizes ½ hp. to 2 hp. Ignition is gas-electric.

The burners handle No. 5 oil or lighter without preheating, and take No. 6 preheated, either with manual, semi-automatic or fully automatic control. Due to a unique oil feed arrangement by which oil is fed into the cup through stationary double tubes attached to an oil receiving fixture, all internal packing is eliminated.

"X" Boiler Compound Now in Powder Form

"X" LABORATORIES have announced a twin companion to "X" Boiler Liquid, the "X" boiler powder which is claimed to give the same results as "X" Liquid marketed since 1916. This powder is poured into the boiler to be repaired through the safety valve tapping, or may be mixed with hot water and poured into the boiler. The powder dissolves and circulates to find the leak. It is claimed to be especially effective against casting failures and sand holes.

The powder stands any pressure the boiler can take and is said to be undam-

aged by contraction and expansion. The manufacturer reports it is free from solid impurities such as sawdust, cement, shellac, solder, water glass or flaxseed meal. It is compounded from special soluble gums.

"X" Powder is available at supply houses handling Liquid and Flush Rustoff.

Frank J. Mahoney, president of Renick & Mahoney, Inc., New York, was killed in an automobile accident, July 29. He was 53 years old, and long had been prominent as a supplier of oil equipment in the New York metropolitan area.

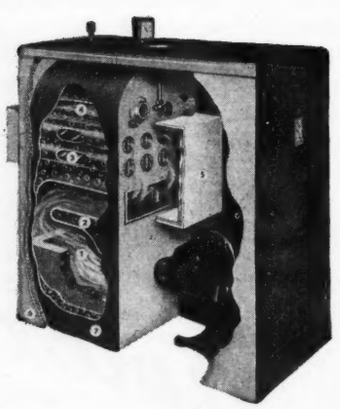
THE NEW YORKER

QUIET PLEASE

ALL STEEL, RESIDENCE
OIL BURNING BOILER

The oil burner man who installs a quiet burner in this boiler has to listen hard to determine if it is "ON" or "OFF". And that occurrence does not just happen. It was planned that way. Quiet operation is built into this boiler.

Sizes 400 to 1,100 sq. ft.



BUILT TO EXCEL IN DEPENDABILITY, LONG LIFE, AND LOW OPERATING COST

TITUSVILLE SALES COMPANY INC.

50 WEST 50th ST., NEW YORK

OIL SOOT E-Z DESTROYER

Cuts Fuel Oil Waste—
Increases Heating Efficiency

Simply apply E-Z, and the soot in fire chamber and flues vanishes instantly.

Soot cuts down heating efficiency and requires more oil to give the desired amount of heat.

Try E-Z once and you will be convinced it is the quickest, easiest and most economical way of soot removal.

Makes Satisfied Customers.

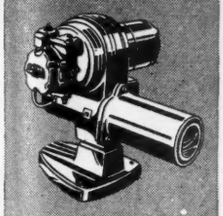
DISTRIBUTORS: Write for Proposition.

HEALY-RUFF COMPANY 797 Hampden Ave. St. Paul, Minn.

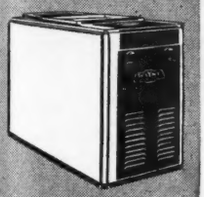
Enclosed find check ( ) money order ( ) Send the following prepaid:

No. 1 pkg. $1.00
No. 5 pkg. $4.50

Name .....
Address .....
City ..... State .....



THERMATIC OIL BURNERS



WINTER AIR CONDITIONERS

DEEP WELL JET SYSTEMS

IF YOU WANT *Action* ..

NOT JUST CONVERSATION..WE'LL SEND OR BRING YOU FULL DETAILS OF THE PLAN!

WHOLESALER DEALER PARTNERSHIP PLAN
WAYNE HOME EQUIPMENT

Wayne packaged Home Equipment is essential to modern living. Not luxury items, but basic requirements for all homes.

All standard units are easily installed without trick "gadgets". You can rely on Wayne "common sense" Home Equipment for more sales and fewer service calls.

A FULL LINE OF INSTALLED HOME EQUIPMENT

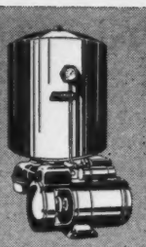
Write for details of the "Partnership Plan." Wayne's complete, packaged selling program has what it takes to get and keep a profitable volume of equipment business.

More NET profit because Wayne supplies the material and helps you with your sales programs.

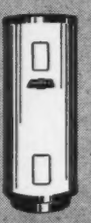
● *FOR A SOUND BUSINESS FUTURE*

WAYNE'S FACTORY-GUIDED SALES PROGRAM IS A PACKAGED UNIT OF SALES AND PROFIT PRODUCING HELPS.

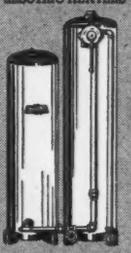
Full Line Dealerships are Still Open



SHALLOW WELL SYSTEMS



OIL, GAS AND ELECTRIC HEATERS

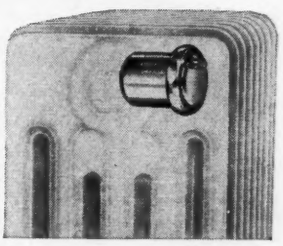


SOF-LUX WATER SOFTENERS

WAYNE HOME EQUIPMENT CO., INC. - 801 GLASGOW, FT. WAYNE, IND.

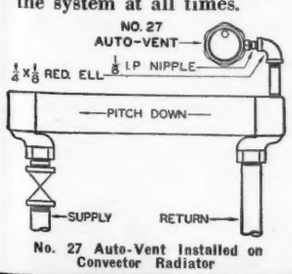
(Formerly Wayne Oil Burner Company)

NO MORE AIR-BOUND RADIATORS



with the *NEW* AUTO-VENT AIR ELIMINATOR

Install the No. 27 Auto-Vent Air Eliminator on all radiators and convectors and release that invisible Air Brake that retards circulation. As air accumulates in the radiators or pipe lines it is automatically vented, assuring perfect circulation throughout the system at all times.



No. 27 Auto-Vent Installed on Convector Radiator

You get more even heat and use less fuel.

No. 27 can be installed on convectors, baseboard radiation panels, radiant heating coils, etc., without the use of an air chamber. For pressures up to 50 lbs.

Ask your jobber—Prompt delivery.

PLAY SAFE—USE THEM ON EVERY JOB

MAID-O-MIST INC.

AUTOMATIC HUMIDIFIERS FOR ALL TYPES OF HEATING SYSTEMS

3221 NORTH PULASKI ROAD
CHICAGO 41 ILLINOIS

Reco AIR CIRCULATOR

RADI-AIRE

Combines Exceptional Beauty With Unusual Cooling Efficiency

Exceptional and painstaking care was taken in the design of the various models of RECO Air Circulators to produce fans which are artistic and convey an impression of distinctive beauty.

Has Year Around Use

Not only is the RECO desirable for summer cooling but it is invaluable in cold weather. As it blows upwards, it drives down the hot air which accumulates at the ceiling and provides uniform temperature throughout the rooms. It prevents air stratification, eliminates cold floors and dissipates smoke and odors.

Made in various sizes in high stand, low stand and ceiling models. Write for prices, dealers' discounts and complete information.

A View of the 24" High Stand Model Equipped with Coat Rack

Established 1900

REYNOLDS ELECTRIC COMPANY

2687 W. CONGRESS STREET CHICAGO 12, ILLINOIS

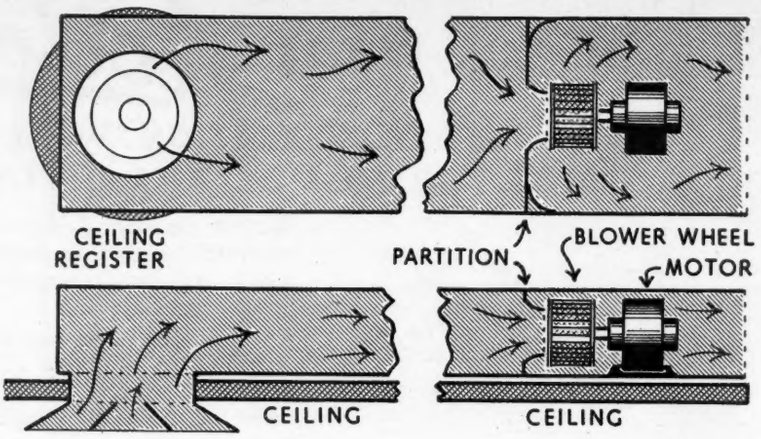
Everyday Snags

Emergency Pipe Dope

THIS WILL not serve as well as good pipe thread compound which is made for the purpose, but if you are servicing a burner and are caught short of such compound you can usually get by at least temporarily by using thickened shellac or quick-drying lacquer on the screwed-joint threads of pipes and fittings. The procedure is less convenient and more time-wasting than using the proper compound. Clean both sets of threads carefully. Make certain they are not wet with fuel oil. Give the male thread one coat of shellac or lacquer and let this dry for about ten minutes, and then apply a second generous coat and screw the joint together.

High-Capacity Ventilator

EVEN WHILE plasterers were getting ready to finish the walls of a new home which is to be air-conditioned, efforts were still being made to obtain a blower unit for drawing air from the exhaust register which was to be located over the cook-stove. Eyeing the plan for a duct about seven inches high, 14" wide, and eight feet long, to fit between the beams over the kitchen ceiling and take the air from the ceiling exhaust register to outdoors, the heating engineer thought up a new idea. A partition could be installed in the duct easily. It could have a round hole and a collar to provide an air entrance to a blower wheel, and a set of sheetmetal curves for streamlining it a bit. A one-tenth horsepower motor which happened to be on hand could be used to drive a suitable-size blower wheel which could be obtained at an oilburner supply house. The diagram shows the finished unit. The motor can be reached for twice-a-year oiling and cleaning by setting up a ladder outside the house, removing four screws which hold on the outside air register, and reaching in and sliding out the motor, which is secured in a sheetmetal slide piece and receives current from a plug and receptacle that are easily disconnected by reaching into the duct. On the kitchen wall are a switch and indicator light for controlling the ventilation. If obtainable, no doubt a specially-made exhaust blower



NEW SKUTTLE AUTOMATIC HUMIDIFIER Series 500

Large Inspection Door and frame may be mounted at any location on the furnace bonnet.

Adjustable Collar fits either sloping or vertical bonnets.

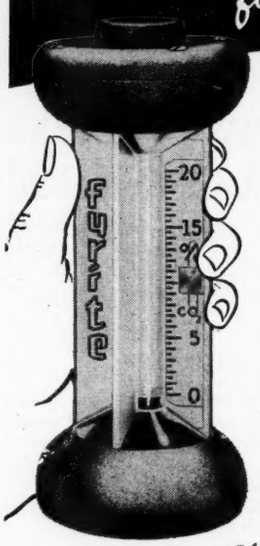
Drawn-Steel Pan construction is entirely without welding. No seams whatever.

Length of pan sizes are 12", 16", 20", 24" and 28". Fully adjustable to fit odd sizes.

For Greater Humidity, use the No. 590 Vapoglas Plates with the series 500 Humidifier.

517 E. LARNED — Skuttle Mfg. Co. — DETROIT 26, MICH.

The Standard SERVICE INSTRUMENTS for Heating Men



The FYRITE CO_2 Indicator at the left, with the DRAFTRITE Draft Gauge below and our 100° to 950°F. Thermometer, make a handy, economical combustion testing set that has everything you need for oil burner service and installation tests.

Such tests are not only powerful selling aids for the alert heating man—they are now required by nationally-accepted codes such as FHA Minimum Construction Requirements, OHI Installation Recommendations, Massachusetts Oil Burner Ordinance, and Department of Commerce Commercial Standards.

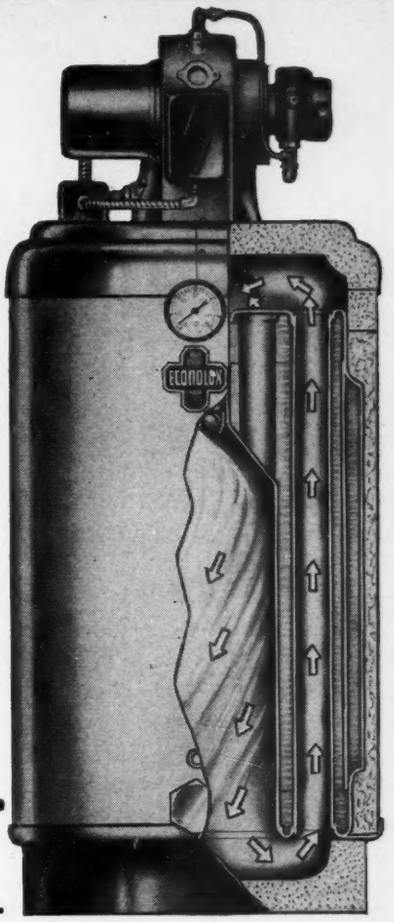
Your jobber can probably show you these instruments. If not, send us his name and ask for Leaflet 701 which gives complete particulars.

Used by More Than 20,000 Heating Men!

BACHARACH INDUSTRIAL INSTRUMENT CO.
7000 BENNETT STREET, PITTSBURGH 8, PA.
Available at all Sales Offices of Cole-Sewell Engineering Co.

"...your new Econolux has put me into the oil-burner business at last"

"I've been selling fuel-oil for years . . . and passing up lots of chances to sell burners because I figured I didn't have the trained men it would take to sell them right and install them right . . . at a profit. Then I saw your new Econolux at the Oil Heat show in Philadelphia.
"Right away I saw that hooking it up was a job that Pete and I could do quick . . . and do right. So here's my order for the first one. There'll be more later . . . they're sure easy to sell. I tell them how fine it is to have all the heat and hot water you want, night or day . . . everything automatic . . . quiet and reliable and foolproof for years. And I certainly can show them how little it costs for I've been supplying oil to several homes that use Johnson Burners and I know how small their oil bills run."



THERE was more to to the letter. But the part we're quoting is the part that may interest Oil Dealers, Sheet Metal and Plumbing Contractors who, like the writer, have been passing up oil-burner sales. If you're one of them . . . maybe you ought to investigate the possibilities of this surprising new Econolux 150-V. It supplies all the heat and faucet hot water needed for a 10-room house or small business building, using either gravity or forced Hot Water Heating Systems. It's completely automatic. It's good looking and quiet. And it's *small* . . . only 24" wide by 60" high. It has 150,000 B. T. U. output. No separate storage tank for domestic hot water is needed. It comes completely assembled, ready to hook up to flue, wiring circuit and water lines. There's a lot more to the story. May we send it?

Johnson Oil Burners

S. T. JOHNSON CO.
940 Arlington Ave., Oakland 8, Calif.
401 No. Broad St., Philadelphia 8, Pa.

PREFERRED ANTI-SIPHON VALVES

APPROVED BY UNDERWRITERS AND NEW YORK CITY

Available for prompt delivery

As required for use when tank is higher than burner—permits pumping of oil but shuts off line if suction line breaks. Two types—B5 holds against 5 ft. head. B10 against 10 ft. When ordering, specify type and suction tap arrangement—⅜", ½", ¾" or 1".

PREFERRED UTILITIES MANUFACTURING CORP.
1860 Broadway, New York 23, N. Y.

PREFERRED UTILITIES

GORTON *Vapor Equalizing*

Valves and Air Eliminators

FOR RADIATORS AND MAINS

FAST VENTING FOR AUTOMATIC HEATING

Make all radiators heat up evenly and quickly on 4 to 8 ounces vapor pressure.

Gorton Vapor Equalizing Valves for radiators are now being furnished with a polished nickel-plated finish.

Write for plate giving the actual sizes of air outlets of Gorton Valves. Literature and prices also gladly sent.

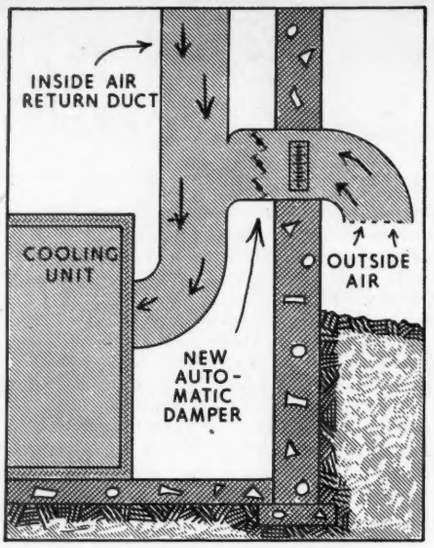
GORTON HEATING CORPORATION
Since 1887—Manufacturers of Heating Equipment
Cranford, New Jersey

unit would have been better for the job. As matters stand, good ventilation will be obtained from this unit which handles about 200 cfm.

* * *

Improving Cooling Plant

CHECK-UPS recently were made to determine why a three-ton summer cooling plant, installed before the war, has always failed to cool the rooms properly during hottest weather. Cooling load figures showed the plant large enough. Air-flow measurements showed excessive flow of outside air into the return system, more than 60% of the air returning to the circulating blower coming from outdoors and being considerably warmer on hottest days than the air re-circulated to the unit from within the building. Informed of this and of the decision to block the outside air intake, the owner balked. He reported that the designer of the system must have been influenced by his (the owner's) desire that "loads of outside air" be provided. The compromise shown in the diagram was worked out and applied. The new automatic damper in the outside air duct is operated by an inexpensive damper motor of the type used to operate the dampers of a coal-fired heating plant. Located inside the outside air duct and close to the damper is the room thermostat which causes the damper motor to move the new damper. When the outside temperature is below 85°, the outside air damper is wide open; when the outside temperature rises above this, the damper closes to the point at which only 10% of the air going to the blower comes from outdoors. Except when this makes the cooling plant unable to chill the rooms properly, the unusually great amounts of outside air which the owner desires are still being fed to the cooling unit, but on the few very hot days of the summer, when cooling counts most in increasing indoor comfort, the system automatically adjusts itself to take in only reasonable amounts of outside air.



* * *

Ending Water Hammer

WATER HAMMER trouble started in a certain home after a tankless water heater was installed. The water for the house was obtained from an ordinary well pump equipped with a pressure tank, and on checking the dealer found the pump starting when the tank pressure dropped to 25 lbs. and stopping at 45 lbs. The water hammer was greater, naturally, when the pressure was high just after the pump stopped. Simply installing a better and more sensitive pressure control for the well pump, to start it at 27 lbs. pressure and stop it at 33 lbs. pressure, ended the water hammer. The owner found the steadier water pressure a decided improvement. Very short "on" and "off"

BOB SAYS:

2" Fill Boxes
Flush Type

for Immediate Delivery!

1¼" Vent Caps
Slip-On Type

Very Low Prices On
50 & 100 Lots. A Real Bargain

Copper and Aluminum Alloy
Tough—Durable—Weatherproof

WILLIAM SINGER
2401 Davidson Ave. Bronx, N. Y.

Now is the time to call on

VIKING

To Help You With Your Pumping Problem

In spite of the fact that pump deliveries are still in the future, it is a wise policy to plan now for their inclusion later. It is time to discuss your requirements for expansions, replacements and new designs. Check carefully your installation problems.

If you have a question concerning the type of pump needed and how best to install it for greatest efficiency, now is the time to work out these details.

Viking's nation-wide sales and service organization is ready to lend a helping hand. Write today for free folder 1506EE. It shows the latest in Viking Rotary Pumps.

See Our Catalog In SWEETS

VIKING PUMP COMPANY
CEDAR FALLS, IOWA

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Man Experienced in Distributor Relations

A corporation engaged in building a national organization of specialty distributors devoted to the sale of frozen food and home storage equipment is seeking a man of ability and experience to head its Department of Distributor Relations.

Since our organization is unique within its field, it is unlikely that anyone will have the specific experience we desire. However, men who know the functioning of major distributive operations in the household appliance field, the automotive industry, or the food business should qualify.

The experience desired is with such problems as: (1) operating facilities; (2) inventory and records; (3) office requirements and routines; (4) training sales and office personnel; (5) direct mail and publication advertising; (6) publicity and related functions.

This is an exceptional opportunity for a man between 30 and 45 who is willing to travel, who is equipped with the necessary experience, tact, and judgment, and who is ambitious to integrate himself into a new and growing industry of major importance.

All applications will be considered in confidence. Write full information. Address Box 575, c/o Fuel-oil & Oil Heat, 232 Madison Ave., New York 16, N. Y.

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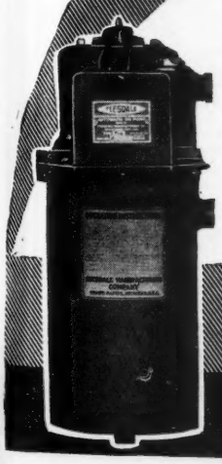
T.U.X.

Fully-Automatic

OIL PUMP

"The Heart-Beat of the Burner's Oil Flow —"

FAVORED for PRECISION PERFORMANCE



Capacity 30 Gallons per Hour

- Silent and Leak-proof
- Vapor and Oil Tight
- Trouble-free
- Self-Priming
- All Parts Interchangeable
- Passed by the UNDERWRITERS
- Entirely Automatic

WRITE FOR DETAILS

TEESDALE MFG. CO.

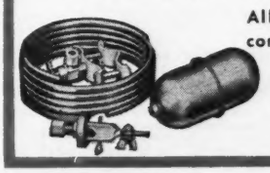
Pioneer Builder of Precision Fuel Oil Pumps

427 Market Ave.
GRAND RAPIDS 3, MICH.

Make an Extra Profit on every Furnace "Cleaning Job"

Install the Viking Automatic Furnace Pan Filler

COMPLETE OUTFIT IN ONE HANDY KIT . . .



All the necessary parts and fittings for a complete installation including 6 feet flexible copper tubing, saddle valve, copper float and the Viking Top Seat Float Valve.

INSTALLS IN LESS THAN 30 MINUTES

Make an Extra $5 Bill on every Cleaning or Re-setting job. Costs you only $2.50 for the complete kit. Easily sold; quickly installed . . . carry one with you on every call . . . easily worth $7.50 to any homeowner.

Fill out and mail the order blank today . . .

ONLY YOUR REGULAR TOOLS NEEDED

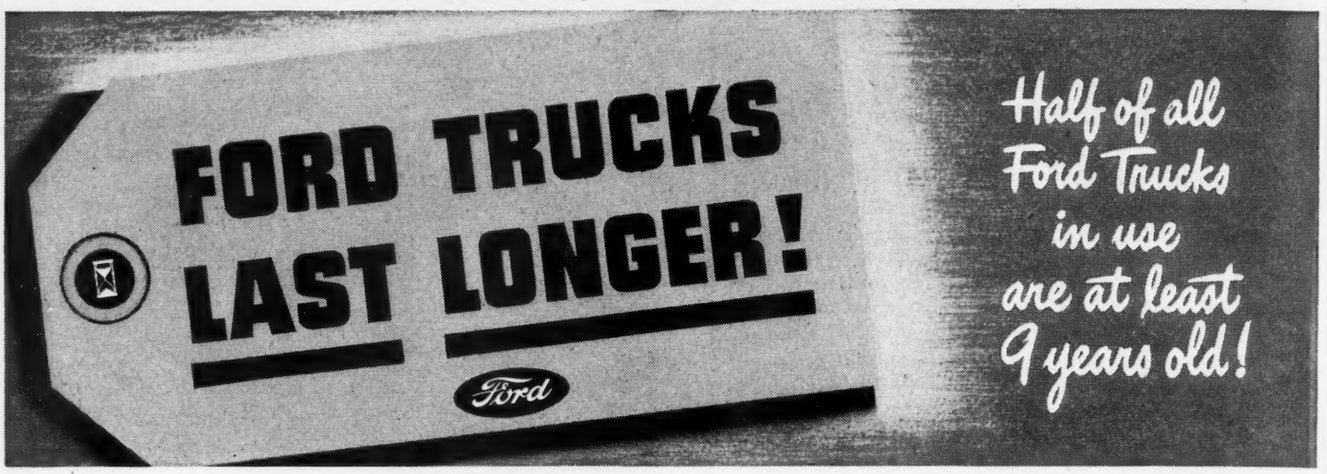
Drill a ⅜" hole in any convenient water line and attach the saddle valve, drill a ⅜" hole in the water pan and install the float valve, connect the saddle valve and the float valve with the copper tubing and the installation is complete.

Viking

ARMY NAVY FOR EXCELLENCE

AIR CONDITIONING CORP. 5600 WALWORTH AVE. CLEVELAND 2, OHIO

Gentlemen: Please ship at once
_____ VIKING AUTOMATIC FURNACE PAN KITS at $2.50
NAME _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____
Bill thru my jobber ☐ Check enclosed ☐
My jobber is _____
We will ship from our nearest jobbers stock, if no preference is shown.



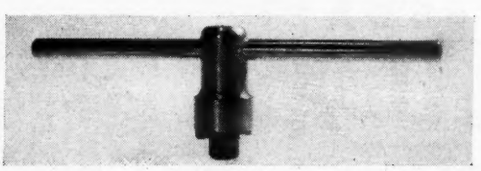
periods for the well pump were avoided by arranging to have somewhat more air stored in the pressure tank of the well water system than usually is stored.

* * *

Radio Interference

A CERTAIN burner dealer who prefers continuous ignition for the pressure burners he installs, and always plans to use it for new installations, keeps on hand (when he can get them) one or two stack control panels which can give intermittent ignition. When his best service man cannot lick a radio interference complaint, caused by the ignition transformer, by working on the job an afternoon or two, the dealer simply switches the installation to intermittent ignition. The stack control panel has to be changed, and one more 110-volt wire must be run from the smokepipe to the oil burner. The owner still hears a buzz on the radio when the burner starts, but since it goes off in a few seconds this invariably is a welcome relief, the dealer finds, to hearing the buzz on the radio all the while the burner operates, and to date the affected home owners have proved to be satisfied by this remedy. Only half a dozen of this dealer's 500-odd oil burners are now using intermittent ignition. The dealer agrees he could lick the radio interference trouble on these jobs without switching to intermittent ignition, but believes he gets rid of the headaches most quickly, inexpensively, and positively by making the switch. He adds that according to his personal opinion based on experience, continuous ignition still is preferable for most pressure burners but that he knows that many experts do not agree with him in this.

GOOD BURNERS
PERFORM BETTER
with
M & L FUEL OIL PREHEATERS
Once tried—always used
Write for bulletin No. 740
MANNING & LEWIS ENGINEERING CO.
28-42 OGDEN ST. **NEWARK 4, N. J.**



New Bellows Wrench
for Detroit Pressure Regulating Valves
For easy and faster servicing. Features an all-position 10" "T" handle. Position by turning knurled pilot which also helps in loosening stubborn retainer nuts. Made of hardened steel for extra strength and cadmium plated. PRICE $3.45. Available from your wholesale supplier or jobber.
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Asphalt Paint
Aluminum Powder
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Boiler Treatment
Boiler Stop-Leak
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Boiler Putty
Cutting Oil
Fuel-Oil Tank Cleaner
Furnace Cement
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Combustion Chambers
A Product of
McLeod & Henry Co., Inc.
NU-TROJAN Combustion Chambers eliminate excessive, costly servicing for the installer; increase oil burner efficiency for the owner. Have fusing point of 3180°. Supplied with "Steel Mixture" Baffle Head, Bonding and Flooring material. Write Dept. 61 for details.
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Everything for the Oil Burner Trade
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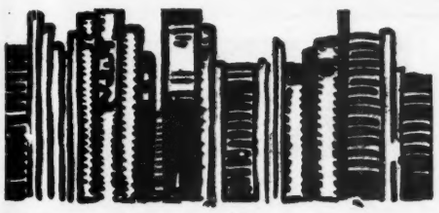
FORD TRUCKS LAST LONGER!

More Ford Trucks in Use Today Than Any Other Make!

Ford



THE BOOK SHELF

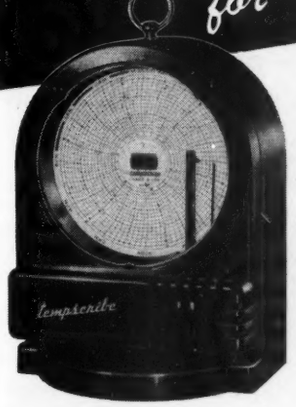
Beacon Radiation Book for Quick Heat Loss Calculation

TABLES SHOWING SQUARE FEET of steam and hot water radiation required for rooms ranging in size from 5 x 5 ft. to 20 x 30 ft. are presented in the *Beacon Radiation Reference Book* and *Heat Loss Guide*, compiled and edited by Edward Beckenstein, and published by Heating Publishers, Inc. Radiation requirements are given for each room with from one to three windows, all possible combinations of exposed sides, and ceiling heights from seven to twelve feet, inclusive. A section in the front of the book shows the square feet per section of cast iron radiators of various styles and heights.

The book is pocket size, has a flexible binding that allows it to lay open flat, and stiff paper covers. The tables are reproduced by photo-offset on a heavy bond paper. The data section and radiation tables occupy 200 pages. Price per copy is $2.00.

As explained in the foreword, the book is intended as an aid to quick estimating of radiation requirements for any of the various trades and occupations concerned with heating. The Btu method, which is the standard and accurate method of calculating heat loss has been used in arriving at all figures in the tables. Rules for determining radiation for conditions other than those assumed are also given.

The Standard SERVICE INSTRUMENTS *for Heating Men*



SHOWS NEED FOR REPAIRS OR MODERNIZATION OF HEATING INSTALLATIONS!

DEMONSTRATES THE HEATING COMFORTS THAT WILL RESULT FROM THE RECOMMENDED IMPROVEMENTS!

SETTLES COMPLAINTS DIPLOMATICALLY AND KEEPS YOUR CUSTOMERS SATISFIED!

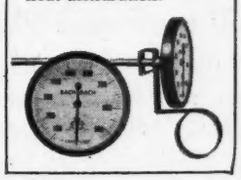
The TEMPSCRIBE Temperature Recorder above (and a companion Motor Operation Recorder), and the dial-type Thermometer at the right, are instruments that can help you obtain maximum profit on service jobs—*and build your reputation for reliable, expert service.*

Write for Thermometer Leaflet 708 and TEMPSCRIBE Recorder Bul. 704.

BACHARACH INDUSTRIAL INSTRUMENT CO.
7000 BENNETT STREET, PITTSBURGH 8, PA.
Available at all Sales Offices of Cole-Sewell Engineering Co.

RANGE—100° to 950°F.

Ideally suited for checking temperature of flue gas, as well as in warm air ducts and at register outlets for balancing heat distribution.

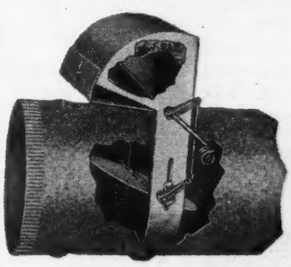


CSE **BAROMETRIC DRAFT CONTROLS**

STOCK UP NOW . . . FAST, EASY SALES!

Cole Draft Governor

THE LEADING OIL BURNER CONTROL



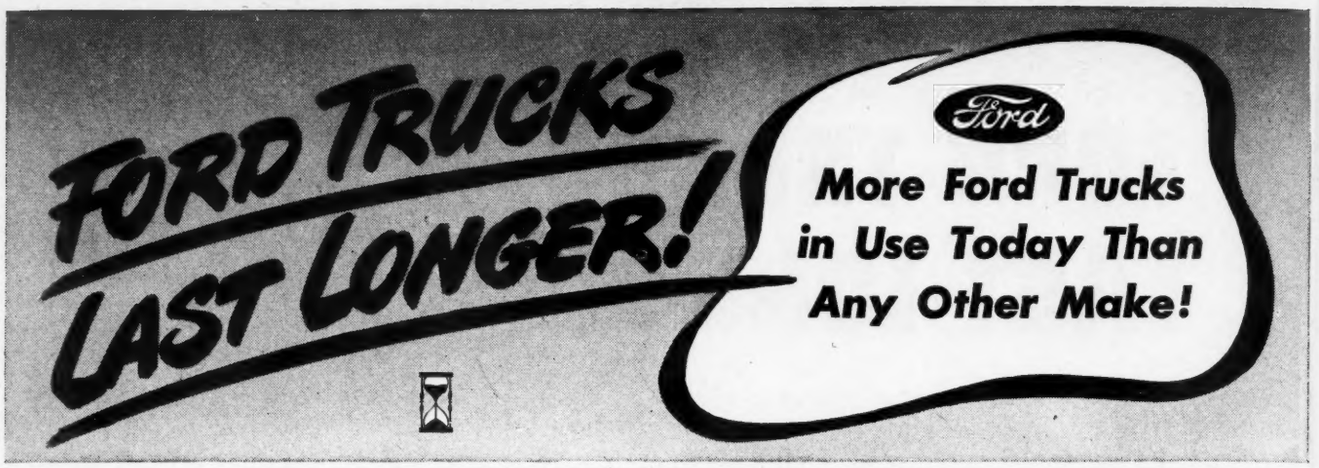
Tops in Efficiency
Holds DRAFTS TO THE "IDEAL MINIMUM"

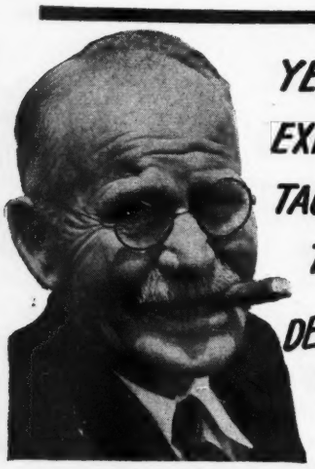
The Cole Draft Governor can be installed on any angle, even on elbow, without taking down pipe. Equipped with graphite oilless bearings, asbestos padded stops.

— ORDER TODAY —

We manufacture a complete line of Draft Controls including Draft Korektors, Cole DRAFT Governors and Sullivan DRAFT Stabilizers. Wire or Write for full details.

COLE-SEWELL ENGINEERING COMPANY
(Formerly Cole-Sullivan Eng. Co.)
2288 University Ave., St. Paul 4, Minn.





YEARS OF EXPERIENCE TAUGHT ME TO USE DEPENDABLE GAUGES. THAT'S WHY I RECOMMEND ONLY

LEVELOMETER
Tank Gauges

These trustworthy gauges eliminate guess work and offer convenient remote readings... as well as assuring greater protection against overflowing oil tanks. Consequently, Levelometer tank gauges save service calls and offer greater customer satisfaction all around. Little wonder, Levelometer is the choice of dealers who insist upon dependable oil tank gauges.

Midget LEVELOMETER
Lowest priced Remote Reading Gauge built

"Liquids Worth Storing Are Worth Measuring"

THE LIQUIDOMETER CORP.
36-19 SKILLMAN AVE., LONG ISLAND CITY, N.Y.

I-B-R Issues Two New Installation Guides

INSTALLATION GUIDES No. 2 and 3 have been issued with a March 1946 date-line, the first since Guide No. 1 on One Pipe Forced Circulation Hot Water Heating Systems issued in January, 1945. I-B-R Installation Guide No. 2 is on One Pipe Steam Heating Systems for buildings having a heat loss not in excess of 92,640 Btu per hour, or the equivalent of 386 sq. ft. of steam radiation. Guide No. 3 covers the installation of indirect water heaters for small homes.

I-B-R Guide No. 2 covers one-pipe steam installations in three steps: (1) determination of radiation; (2) selection of piping size and (3) selection of the boiler. Tables and drawings simplify the procedure for the novice, and made these determinations easier for the experienced man.

Guide No. 3 covers such subjects as selection of the indirect heater, either storage or tankless types; installation details, and a series of diagrams showing suggested installations and control arrangements for steam and hot water heating systems.

All guides are available at the Institute of Boiler and Radiator Manufacturers, New York 17, N. Y., at 25 cents each.

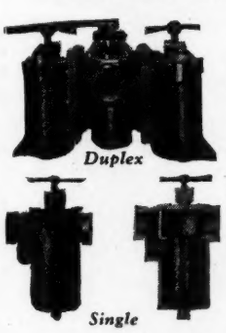
Book Covers Opportunity In Small Business Field

A BUSINESS OF MY OWN, a new book by Arthur E. Morgan, president of Community Service, Inc., Yellow Springs, Ohio, has just been published to tell vet-

KRAISSL
FILTERS
STRAINERS
PUMPS
Keep Fuel Oil Lines Open and Active

Year-in, year-out performance proves the skill of KRAISSL engineering design and the honesty of KRAISSL manufacture.

Class 72 Strainers and Filters



Single and Duplex types for suction or discharge service — any practical degree of filtration in units designed for low pressures as well as up to 500 lbs. hydrostatic test—easily removable filter basket insures quick cleaning.

Class 60 Heavy Oil Pumps

Standard equipment wherever independent pump and motor sets or booster pumps for pump-type burners are required.

Submit your fuel-line problems to KRAISSL engineers—literature and prices on request.

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KRAISSL THE KRAISSL COMPANY
HACKENSACK, N. J.

COUNTERFLOW AIR CONDITIONING UNITS
OIL BURNERS
UNDERGROUND FUEL TANKS
BASEMENT FUEL TANKS
BLOWER UNITS
TRUCK TANKS
Certified
CERTIFIED FURNACE CO.
DIVISION OF
STAINLESS & STEEL PRODUCTS CO.
1000 BERRY AVE. ST. PAUL, MINN.

erans and others of the opportunities—and hazards—in starting and operating small businesses. The book is unusually realistic in its coverage of a variety of opportunities. The section on services ranges from mechanical service on household equipment to tree surgery. In paper covers it sells for $1.

Mr. Morgan formerly was president of Antioch College, former chairman of TVA, and a successful engineer.

Many books on small business, both private and government-issued, are leading young men into business where many must fail for over competition. In a town of 15,000, where three electric shops filled the needs before the war, there are now eleven. Small stores are being multiplied far beyond the need. At the same time, other services and businesses which are greatly needed are not supplied. This book spends little time in going over the old ground of starting a store or filling station, when there are already too many, but it tells of scores of businesses no more difficult to understake, but actually needed, and providing opportunity for widely varied abilities.

◈

Heat Transmission Through Walls Booklet by U. of M.

THE ENGINEERING EXPERIMENT Station, University of Minnesota has issued Bulletin No. 24, "Factors Affecting Heat Transmission Through Insulated Walls."

Professor Frank B. Rowley, Director of the Engineering Experiment Station, and Clarence E. Lund, Director of Re-

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OIL BURNING
WATER HEATERS
Automatic Patented Spark ignition
Five sizes, with vaporizing or pressure type burners, electric ignition, thermostatic control, modern design--the best in water heaters.
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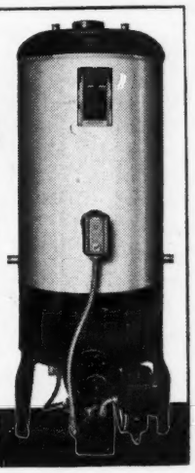
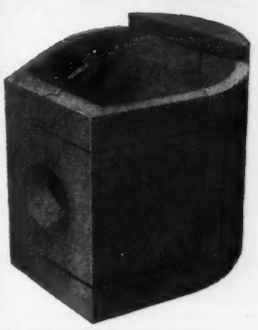


truly TIME-TESTED



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THE LEADER
SEE YOUR JOBBER
Monogram Combustion Chamber Co.
PHILADELPHIA 4, PA.

BIG SPECIAL
"$2.00 per quart" quality KOREXO BOILER WATER TREATMENT—One pint in average steam boiler—removes scale and oil—prevents rusting—no flushing—BUY NOW—MONEY-BACK GUARANTEE.
NOW ONLY $15.50 for 5 Gallon Can
F.O.B. Fords, N. J.
EASTERN PRODUCTS COMPANY
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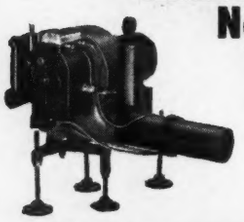
HAYWARD OIL BURNERS
ROTARY and PRESSURE ATOMIZING TYPES
Dealer and Distributor Inquiries Invited.
HAYWARD MFG. CO., INC.
505 COURT STREET BROOKLYN 31, N. Y.

★ RAYFIELD ★
AUTOMATIC



No. 5 OIL BURNERS
REDUCE HEATING COSTS...
INCREASE YOUR PROFITS

Burn No. 5 heavy fuel oil. Self contained, all electric. Self-lubricating. Many new exclusive features. Write for full details

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Write for literature and trade price

The Original. Still the Best. Hundreds of Thousands in Use. • Holds the draft constant in the fire box. • Scientific draft control for the smallest to the largest jobs. • Stove, domestic, and commercial sizes from 4" to 24" in diameter. • Industrial sizes from 24" x 24" to 5' x 12'.

PREFERRED UTILITIES Mfg. Corp.
1860 Broadway, New York 23, N. Y. Boston Office: 839 Beacon St.

search, Seeger-Sunbeam Corporation, have collaborated in further investigations of insulation in walls. This bulletin will be of great interest and value to anyone in the building industry and to all present and prospective home owners.

Although the laws governing the heat flow through insulated walls have been rather thoroughly investigated, there were still some points which caused controversies and differences of opinion. As the result of extensive research in this field, the authors have made recommendations regarding these factors affecting the heat transmission through insulated walls: (a) the effect of direction of heat flow through an insulated wall on the total amount of heat flow under given temperature conditions, (b) the effect of thickness of insulation and insulation value per inch of thickness, (c) the effect of methods of applying fill or loose insulation, (d) the effect of structural members of a wall on overall coefficient of heat transfer, (e) the effect of paper covering over surface of insulation, and (f) the effect of one-inch flooring on joists over insulation.

The booklet may be obtained for 40c by addressing the Experiment Station.

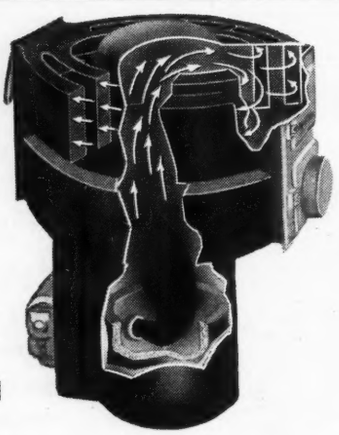
◈

Donald H. Anderson has been appointed assistant advertising manager for Motor Wheel's Duo-Therm Division, Lansing, Mich. He was with Jaqua Company as an account executive before his appointment to assist *Karl Egeler,* advertising and sales promotion manager.

patented

Hot gases from the burner enter the upper radiator where they divide and are drawn to opposite end. ➔

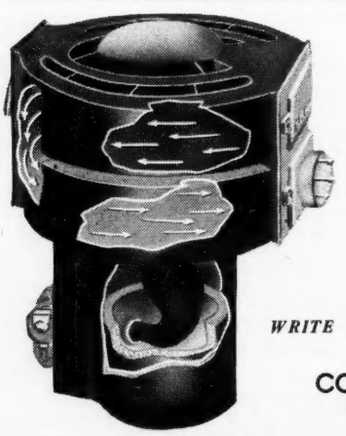
ENCASED IN SMART CABINET



RADIATION
BENTON

The remaining heat overflows into the lower radiator where it is absorbed into the steel flues instead of going up the Chimney. ➔

COMPLETELY AUTOMATIC



FURNACE
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"THE MOST OUTSTANDING OIL FURNACE ON THE MARKET"

WRITE FOR LITERATURE

CORPORATION
MICHIGAN

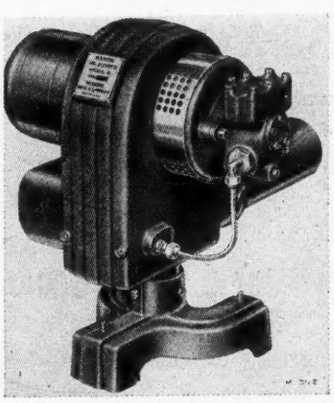
Automatic
Fusible Line Valve

A combination shut-off valve and fusible link for oil burner installations. Self-contained automatic type—no chain, pulley, hook or weight required. Held open by fusible device against a spring. Can be manually operated—horizontal or vertical position.

Globe type valve made from brass bar stock, metal to metal seat and disc construction. Easily installed—no adjustments required.

Made in ⅜", ½", ¾" and 1" sizes.

MOORE and KLING Inc.
221 High Street Boston, Mass.



MARINE OIL BURNERS
1757-63 N. North Park Ave.
Chicago 14, Illinois

A Profitable, Easy-To-Service Burner For Your Future

FORD TRUCKS LAST LONGER!

OVER 1 MILLION FORD V-8 TRUCKS IN USE TODAY!

Ford

Oilheating Salesman

(*Continued from page 46*)

is concerned, one of your good salesmen could be within a range that extended higher than the 60.

The practical value of this knowledge to a company in the fueloil and oil heat business is that, for many qualities, its good salesmen will vary much more than do successful salesmen in other kinds of business. This means that your retail salesmen need much individual treatment. Your good men have quite diverse natures. To get the best results from each man requires individual treatment based on a knowledge of how little or how much of various significant traits he has.

You can gain this knowledge over a period of time in working with a man, or you can get it at the time the employment starts—if you use psychological tests carefully selected and carefully interpreted.

Delhi Rated Major Oil Find

DISCOVERY BY THE SUN Oil Company of the Delhi Field in Richland Parish, La., in December 1944, has been rated as the biggest oil field of its type since the discovery of the giant East Texas Field in 1930. John G. Pew estimates the field will produce at least 175,000,000 barrels of crude.

The field, like East Texas, is a stratigraphic trap which is most difficult to locate from surface geology.

Highest Quality joined with
Accuracy and Workmanship---
Responsibility gives you great
Satisfaction and fullest
Confidence toward our
HARSCH *Nozzles!*

H. HARSCH & CO., INC. 230 TUSCAN ROAD, MAPLEWOOD, N. J.

LIGHT WILL GLOW WHEN OIL IS LOW

A quick selling, practical accessory. For old and new installations on any type tank. Aluminum cast head. Mercury switch mounted in separate chamber for safety. Has Underwriter's approval. Sample for demonstration sent on approval. Inquiries invited from burner manufacturers, jobbers, dealers.

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1390 W. Minnehaha Parkway
Minneapolis 9, Minnesota

SIZE OF GAUGE 5" × 5"

THE LIGHT WILL GLOW WHEN YOUR OIL IS LOW
Jessup
OIL TANK WATCHMAN

Manufacturers of Rexoil Conversion Burners, Boiler Units, Furnace Units and Direct-Fired Conditioners

Rexoil Burners have the confidence of over 60,000 users. That's why "you're RIGHT with REXOIL" . . . the line that's easy to sell and STAYS SOLD!

REXOIL

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Fire Box

FUELOIL & OIL HEAT CLASSIFIED ADVERTISING

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NOTICE—Those writing to Box Numbers, address: c/o FUELOIL & OIL HEAT, 232 Madison Ave., New York, 16.

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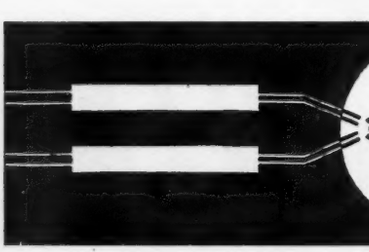

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